CDX-S2200

SERVICE MANUAL

AEP Model
UK Model

Ver 1.0 2004. 05

• The tuner and CD sections have no adjustments.

Model Name Using Similar Mechanism	CDX-R3300
CD Drive Mechanism Type	MG-611MA-186//Q
Optical Pick-up Name	KSS1000E

SPECIFICATIONS

CD player section

Signal-to-noise ratio	120 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit

Tuner section

FM

Tuning range	87.5 – 108.0 MHz
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz/450 kHz
Usable sensitivity	9 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	67 dB (stereo), 69 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

MW/LW

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 279 kHz
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	MW: 30 μV LW: 40 μV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	50 W × 4 (at 4 ohms)

General

Outputs	Audio outputs terminal (rear) Power aerial relay control terminal Power amplifier control terminal
Inputs	Telephone ATT control terminal Remote controller input terminal Aerial input terminal
Tone controls	Low: ±10 dB at 60 Hz (XPLOD) Mid: ±10 dB at 1 kHz (XPLOD) High: ±10 dB at 10 kHz (XPLOD)

– Continued on next page –

FM/MW/LW COMPACT DISC PLAYER

9-877-830-01
2004E04-1
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Sony Corporation
e Vehicle Company
Published by Sony Engineering Corporation

SONY®

Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 176 mm (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 161 mm (w/h/d)
Mass	Approx. 1.2 kg
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

SERVICE NOTES

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This compact disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the exterior.

This label is located on the bottom of the chassis.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

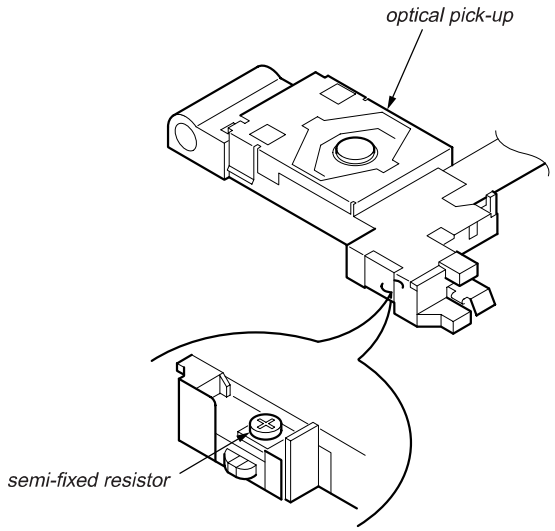
Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

If the optical pick-up block is defective, please replace the whole optical pick-up block.
Never turn the semi-fixed resistor located at the side of optical pick-up block.



TEST DISCS

This set can playback CD-R and CD-ROM discs. The following test discs should be used to check the capability:

CD-R test disc TCD-R082LMT (Part No. J-2502-063-1)
CD-RW test disc TCD-W082L (Part No. J-2502-063-2)

Notes on CD-Rs (recordable CDs)/CD-RWs (rewritable CDs)

This unit can play the following discs:

Type of discs	Label on the disc
Audio CD	COMPACT disc DIGITAL AUDIO Recordable / COMPACT disc DIGITAL AUDIO ReWritable
MP3 files	COMPACT disc DIGITAL AUDIO Recordable / COMPACT disc DIGITAL AUDIO ReWritable / COMPACT disc Recordable / COMPACT disc ReWritable

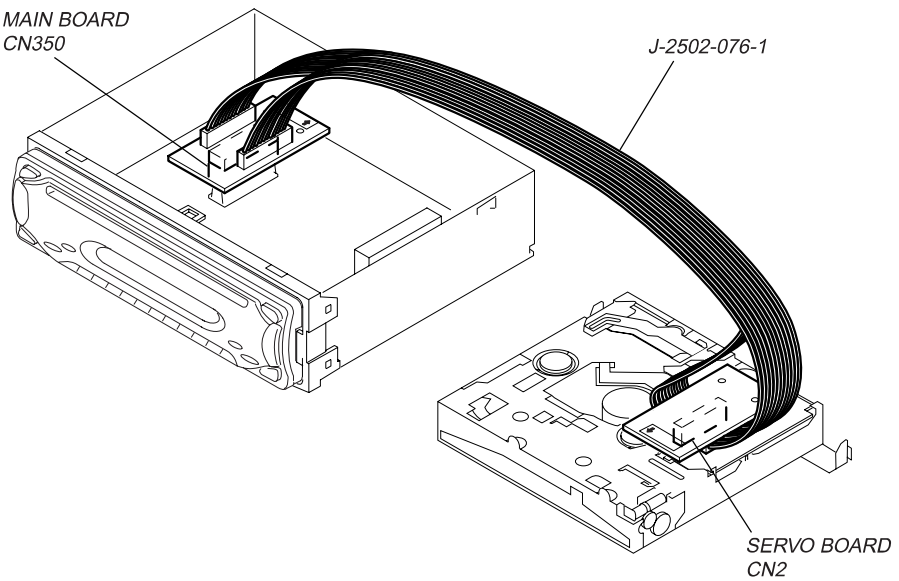
- Some CD-Rs/CD-RWs (depending on the equipment used for its recording or the condition of the disc) may not play on this unit.
- You cannot play a CD-R/CD-RW that is not finalized*.
- You can play MP3 files recorded on CD-ROMs, CD-Rs, and CD-RWs.
- A CD-R/CD-RW to which a session can be added can be played.

* A process necessary for a recorded CD-R/CD-RW disc to be played on the audio CD player.

EXTENSION CABLE AND SERVICE POSITION

When repairing or servicing this set, connect the jig (extension cable) as shown below.

- Connect the MAIN board (CN350) and the SERVO board (CN2) with the extension cable (Part No. J-2502-076-1).



● UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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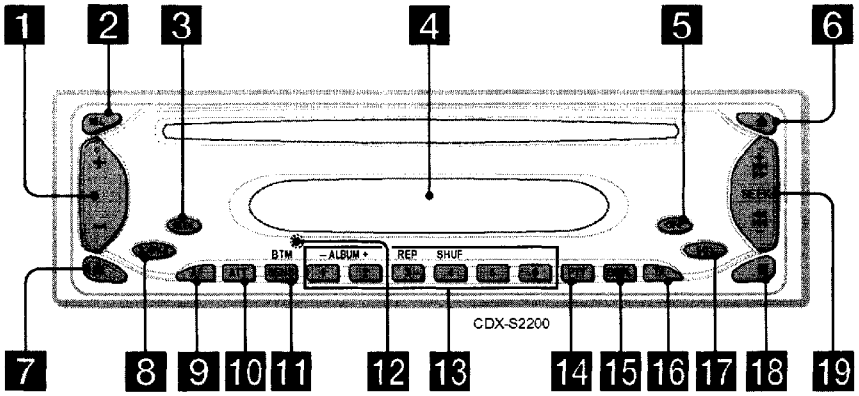
SECTION 1
GENERAL

This section is extracted from instruction manual.

Location of controls

Refer to the pages listed for details.

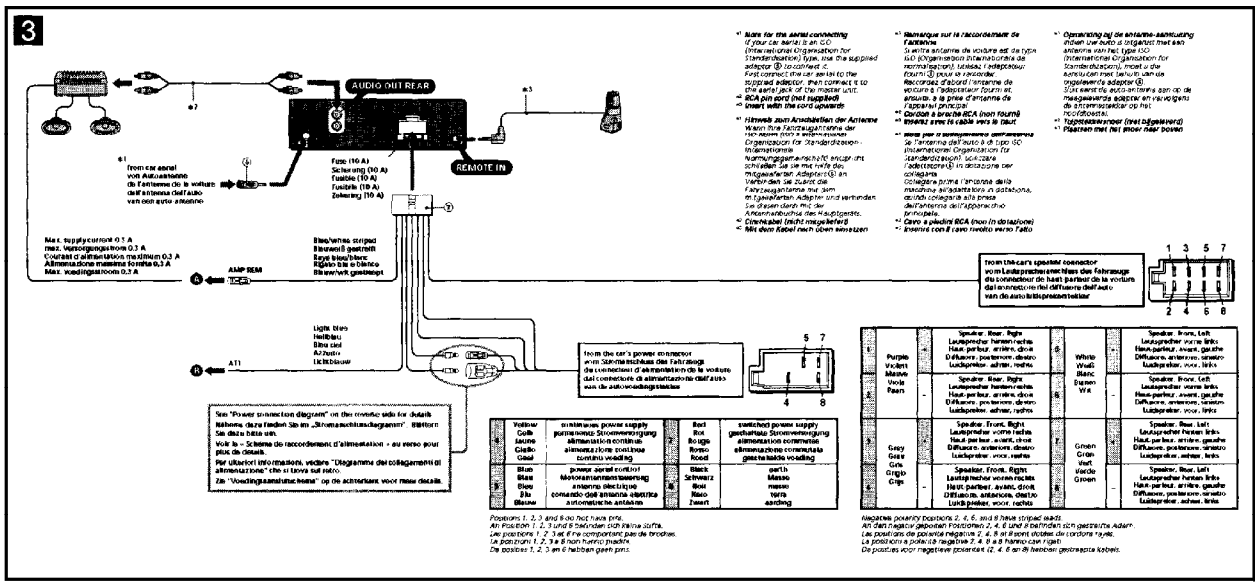


1 **Volume +/– button**
2 **SEL (select) button**
To select items.
3 **MODE button**
To change the operation.
4 **Display window**
5 **OFF (Stop/Power off) button*** 9, 11
6 **⏏ (eject) button** 11
7 **(front panel release) button** 9
8 **SOURCE (Power on/Radio/CD) button**
To select the source.
9 **AF button** 14, 15, 16
10 **ATT (attenuate) button** 19
11 **SENS/BTM button** 12, 13, 16
12 **RESET button** (located on the front side of the unit, behind the front panel) 9
13 **Number buttons**
Radio:
To store the desired station on each number button.
MP3 files:
①: **ALBUM –** 11
②: **ALBUM +** 11
CD:
③: **REP** 12
④: **SHUF** 12
14 **PTY (programme type) button** 16, 17
15 **DSPL (display mode change) button** 10, 11, 14
16 **TA button** 15, 16
17 **EQ3 button** 20, 21
18 **Receptor for the card remote commander**
19 **SEEK +/– button**
Radio:
To tune in stations automatically/find a station manually.
CD (MP3 files):
To skip tracks/fast-forward, reverse a track.

*** Warning when installing in a car without an ACC (accessory) position on the ignition switch**
After turning off the ignition, be sure to press and hold (OFF) on the unit until the display disappears.
Otherwise, the display does not turn off and this causes battery drain.

CDX-S2200

Connections


3
AUDIO OUT REAR
REMOTE IN
Fuse (10 A)
Sicherung (10 A)
Fusible (10 A)
Fusibile (10 A)
Zekering (10 A)
from car aerial
von Autoantenne
de l'antenne de la voiture
dall'antenna dell'auto
van een auto-antenne
Max. supply current 0.1 A
max. Versorgungsstrom 0.1 A
Courant d'alimentation maximum 0.1 A
Alimentazione massima 0.1 A
Max. voedingsstroom 0.1 A
AMP REM
ANT
Blue/white striped
Blau/weiß gestreift
Bleu/blanc
Rigato blu e bianco
Blauw/wit gestreept
Light blue
Hellblau
Bleu ciel
Azzurro
Lichtblauw
from the car's power connector
vom Stromanschluss des Fahrzeugs
de la connexion d'alimentation de la voiture
dal connettore di alimentazione dell'auto
van de autovoedingsstekker
from the car's speaker connector
vom Lautsprecheranschluss des Fahrzeugs
du connecteur de haut parleur de la voiture
dall'connettore dell'diffusore dell'auto
van de auto luidsprekerstekker
Yellow / Gelb / Jaune / Giallo / Geel
continuous power supply / permanente Stromversorgung / alimentation continue / alimentazione continua / continu voeding
Red / Rot / Rouge / Rosso / Rood
switched power supply / geschaltete Stromversorgung / alimentation commandée / alimentazione commutata / geschakelde voeding
Blue / Blau / Bleu / Blu / Blauw
power aerial control / Motorantennensteuerung / commande de l'antenne électrique / comando dell'antenna elettrica / automatische antenne
Black / Schwarz / Noir / Nero / Zwart
earth / Masse / massa / terra / aarding
Purple / Violett / Mauve / Viola / Paars
Speaker: Rear, Right / Lautsprecher hinten rechts / Haut-parleur, arrière, droit / Diffusore, posteriore, destro / Luidspreker, achter, rechts
Grey / Grau / Gris / Grigio / Grijs
Speaker: Front, Right / Lautsprecher vorne rechts / Haut-parleur, avant, droit / Diffusore, anteriore, destro / Luidspreker, voor, rechts
White / Weiß / Blanc / Bianco / Wit
Speaker: Front, Left / Lautsprecher vorne links / Haut-parleur, avant, gauche / Diffusore, anteriore, sinistro / Luidspreker, voor, links
Green / Grün / Vert / Verde / Groen
Speaker: Rear, Left / Lautsprecher hinten links / Haut-parleur, arrière, gauche / Diffusore, posteriore, sinistro / Luidspreker, achter, links
Positions 1, 2, 3, and 8 do not have pins.
An Position 1, 2, 3 und 8 befinden sich keine Stifte.
Les positions 1, 2, 3 et 8 ne comportent pas de broches.
La posizioni 1, 2, 3 e 8 non hanno piedini.
De posities 1, 2, 3 en 8 hebben geen pins.
Negative polarity positions 2, 4, 6, and 8 have striped leads.
An den negativ gepolten Positionen 2, 4, 6 und 8 befinden sich gestreifte Adern.
Les positions de polarité négative 2, 4, 6 et 8 sont dotées de cordons rayés.
La posizioni a polarità negativa 2, 4, 6 e 8 hanno cavi rigati.
De posities voor negatieve polariteit (2, 4, 6 en 8) hebben gestreepte kabels.

Connection diagram (GB)

❶ **To AMP REMOTE IN of an optional power amplifier**
This connection is only for amplifiers. Connecting any other system may damage the unit.

❷ **To the interface cable of a car telephone**

Warning
If you have a power aerial without a relay box, connecting this unit with the supplied power connecting lead ⓑ may damage the aerial.

Notes on the control leads
- *The power aerial control lead (blue) supplies +12 V DC when you turn on the tuner, or when you activate the AF (Alternative Frequency) or TA (Traffic Announcement) function.*
- *When your car has built-in FM/MW/LW aerial in the rear/side glass, connect the power aerial control lead (blue) or the accessory power input lead (red) to the power terminal of the existing aerial booster. For details, consult your dealer.*
- *A power aerial without a relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition switch is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities to avoid damage.*
- *Do not connect the speaker terminals to the car chassis, or connect the terminals of the right speakers with those of the left speaker.*
- *Do not connect the earth lead of the unit to the negative (–) terminal of the speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Connect only passive speakers. Connecting active speakers (with built-in amplifiers) to the speaker terminal may damage the unit.*
- *To avoid a malfunction, do not use the built-in speaker leads installed in your car if the unit shares a common negative (–) lead for the right and left speakers.*
- *Do not connect the unit's speaker leads to each other.*

Note on connection
If speaker and amplifier are not connected correctly, "FAILURE" appears in the display. In this case, make sure the speaker and amplifier are connected correctly.

Anschlussdiagramm (D)

❶ **An AMP REMOTE IN des gesondert erhältlichen Endverstärkers**
Dieser Anschluss ist ausschließlich für Verstärker gedacht. Schließen Sie nichts anderes daran an. Andernfalls kann das Gerät beschädigt werden.

❷ **An Schnittstellenkabel eines Autotelefons**

Warnung
Wenn Sie eine Motorantenne ohne Relaiskästchen verwenden, kann durch Anschließen dieses Geräts mit dem mitgelieferten Stromversorgungskabel ⓑ die Antenne beschädigt werden.

Hinweise zu den Steuerleitungen
- *Die Motorantennen-Steuerleitung (blau) liefert +12 V Gleichstrom, wenn Sie den Tuner einschalten oder die AF- (Alternativfrequenz-) oder die TA-Funktion (Verkehrsdurchsage) aktivieren.*
- *Wenn das Fahrzeug mit einer in der Heck-/Seitenfensterscheibe integrierten FM (UKW)/MW/LW-Antenne ausgerüstet ist, schließen Sie die Motorantennen-Steuerleitung (blau) oder die Zusatzstromversorgungsleitung (rot) an den Stromversorgungsanschluss der vorhandenen Antennenverstärker an. Näheres dazu erfahren Sie bei Ihrem Händler.*
- *Es kann nur eine Motorantenne mit Relaiskästchen angeschlossen werden.*

Stromversorgung des Speichers
Wenn die gelbe Stromversorgungsleitung angeschlossen ist, wird der Speicher stets auch bei ausgeschalteter Zündung mit Strom versorgt.

Hinweise zum Lautsprecheranschluss
- *Schalten Sie das Gerät aus, bevor Sie die Lautsprecher anschließen.*
- *Verwenden Sie Lautsprecher mit einer Impedanz zwischen 4 und 8 Ohm und ausreichender Belastbarkeit. Anderenfalls können die Lautsprecher beschädigt werden.*
- *Verbinden Sie die Lautsprecheranschlüsse nicht mit dem Wagenchassis und verbinden Sie auch nicht die Anschlüsse der rechten mit denen der linken Lautsprecher.*
- *Verbinden Sie die Masseleitung dieses Geräts nicht mit dem negativen (–) Lautsprecheranschluss.*
- *Versuchen Sie nicht, Lautsprecher parallel anzuschließen.*
- *An das Lautsprecherausgangskabel dieses Geräts dürfen nur Passivlautsprecher angeschlossen werden. Schließen Sie keine Aktivlautsprecher (Lautsprecher mit eingebauten Verstärkern) an, da das Gerät sonst beschädigt werden könnte.*
- *Um Fehlfunktionen zu vermeiden, verwenden Sie nicht die im Fahrzeug installierten, integrierten Lautsprecherleitungen, wenn ein Ende eine gemeinsame negative (–) Leitung für den rechten und den linken Lautsprecher verwendet wird.*
- *Verbinden Sie nicht die Lautsprecherkabel des Geräts miteinander.*

Hinweis zum Anschließen
Wenn Lautsprecher und Verstärker nicht richtig angeschlossen sind, erscheint „FAILURE" im Display. Vergewissern Sie sich in diesem Fall, dass Lautsprecher und Verstärker richtig angeschlossen sind.

Schémas de raccordement (F)

❶ **Au niveau du AMP REMOTE IN d'un amplificateur de puissance facultatif**
Ce raccordement sert exclusivement pour les amplificateurs. Le raccordement à tout autre système peut endommager l'appareil.

❷ **Vers le cordon de liaison d'un téléphone de voiture**

Avertissement
Si vous disposez d'une antenne électrique sans boîtier de relais, le branchement de cet appareil au moyen du cordon d'alimentation fourni ⓑ risque d'endommager l'antenne.

Remarques sur les fils de commande
- *Le fil de commande (bleu) fournit du courant continu de +12 V lorsque vous mettez le tuner sous tension ou lorsque vous activez la fonction AF (fréquence alternative) ou TA (informations routières).*
- *Lorsque votre voiture est équipée d'une antenne FM/MW/GO(LW (PO) intégrée dans la vitre arrière/latérale, raccordez le fil de commande de l'antenne (bleu) ou l'arrivée d'alimentation des accessoires (rouge) au borne de l'amplificateur d'antenne existant. Pour plus de détails, consultez votre revendeur.*
- *Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.*

Remarques sur le raccordement des haut-parleurs
- *Avant de raccorder les haut-parleurs, mettez l'appareil hors tension.*
- *Utilisez des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager.*
- *Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit à celles du haut-parleur gauche.*
- *Ne pas raccorder le câble de masse de cet appareil à la borne négative (–) du haut-parleur.*
- *Ne pas tenter de raccorder les haut-parleurs en parallèle.*
- *Ne pas connecter d'enceintes acoustiques actives (avec amplificateurs intégrés) aux bornes d'enceinte de cet appareil, pour éviter d'endommager l'appareil. Veiller à raccorder des enceintes passives uniquement.*
- *Pour éviter tout dysfonctionnement, n'utilisez pas les fils des haut-parleurs intégrés installés dans votre voiture si l'appareil dispose d'un fil négatif commun (–) pour les haut-parleurs droit et gauche.*
- *Ne raccordez pas entre eux les cordons des haut-parleurs de l'appareil.*

Remarque sur le raccordement
Si les enceintes et l'amplificateur ne sont pas raccordés correctement, le message « FAILURE » s'affiche. Dans ce cas, assurez-vous que les enceintes et l'amplificateur sont raccordés correctement.

Schema di collegamento (I)

❶ **A AMP REMOTE IN di un amplificatore di potenza opzionale**
Questo collegamento è riservato esclusivamente agli amplificatori. Non collegare un ciclo di sistema diverso onde evitare di causare danni all'apparecchio.

❷ **Al cavo interfaccia di un telefono per auto**

Avvertenza
Quando si collega l'apparecchio con il cavo di alimentazione in dotazione ⓑ, si potrebbe danneggiare l'antenna elettrica di questa non dispone di scatola a relè.

Note sui cavi di controllo
- *Il cavo (blu) di controllo dell'antenna elettrica fornisce alimentazione a corrente a 12 V CC quando si attiva il sintonizzatore oppure la funzione TA (Indicatore sul traffico) o AF (frequenza alternativa).*
- *Se l'automobile è dotata di antenna FM/MW/LW incorporata nel vetro posteriore/laterale, collegare il cavo (blu) di controllo dell'antenna elettrica o il cavo (rosso) di ingresso dell'alimentazione accessorio al terminale di alimentazione dell'amplificatore d'antenna esistente. Per ulteriori informazioni, consultare il proprio fornitore.*
- *Non è possibile usare un'antenna elettrica senza scatola a relè con questo apparecchio.*

Collegamento per la conservazione della memoria
Quando il cavo di ingresso alimentazione giallo a collegato, viene sempre fornita alimentazione al circuito di memoria anche quando l'interruttore di accensione è spento.

Note sul collegamento dei diffusori
- *Prima di collegare i diffusori spegnere l'apparecchio.*
- *Usare diffusori di impedenza compresa tra 4 e 8 ohm e con capacità di potenza adeguate, altrimenti i diffusori potrebbero venir danneggiati.*
- *Non collegare i terminali del sistema diffusori al telaio dell'auto e non collegare i terminali del diffusore destro e quello del diffusore sinistro.*
- *Non collegare il cavo di terra di questo apparecchio al terminale negativo (–) dei diffusore.*
- *Non collegare i diffusori in parallelo.*
- *Assicurarsi di collegare soltanto diffusori passivi; poiché il collegamento di diffusori attivi, dotati di amplificatori incorporati, ai terminali dei diffusori potrebbe danneggiare l'apparecchio.*
- *Per evitare problemi di funzionamento, non utilizzare i cavi dei diffusori incorporati installati nell'automobile se l'apparecchio condivide un cavo comune negativo (–) per i diffusori destro e sinistro.*
- *Non collegare fra loro i cavi dei diffusori dell'apparecchio.*

Nota sul collegamento
Se l'amplificatore e i diffusori non sono collegati correttamente, "FAILURE" viene visualizzato nel display. In tal caso, accertarsi che l'amplificatore e i diffusori siano collegati correttamente.

Aansluitschema (NL)

❶ **Naar AMP REMOTE IN van een optionele eindversterker**
Deze aansluiting is alleen bedoeld voor versterkers. Door een ander systeem aan te sluiten kan het apparaat worden beschadigd.

❷ **Naar het interface-snoer van een autotelefoon**

Let op
Indien u een elektrische antenne heeft zonder relaisdoos, kan het aansluiten van deze eenheid met het bijgeleverde netsnoer ⓑ de antenne beschadigen.

Opmerkingen betreffende de aansluitsnoeren
- *De antennebesturingskabel (blauw) levert +12 V gelijkstroom wanneer u de tuner inschakelt of de AF (alternatieve frequentie) of TA (Traffic Announcement) functie activeert.*
- *Wanneer uw auto is uitgerust met een FM/MW/LW-antenne in de achterruit/zijvenster, moet u de antennebesturingskabel (blauw) of de hulpvoedingskabel (rood) aansluiten op de voedingsaansluiting van de bestaande antenneversterker. Raadpleeg uw dealer voor meer details.*
- *Met dit apparaat is het niet mogelijk een automatische antenne zonder relaisdoos te gebruiken.*

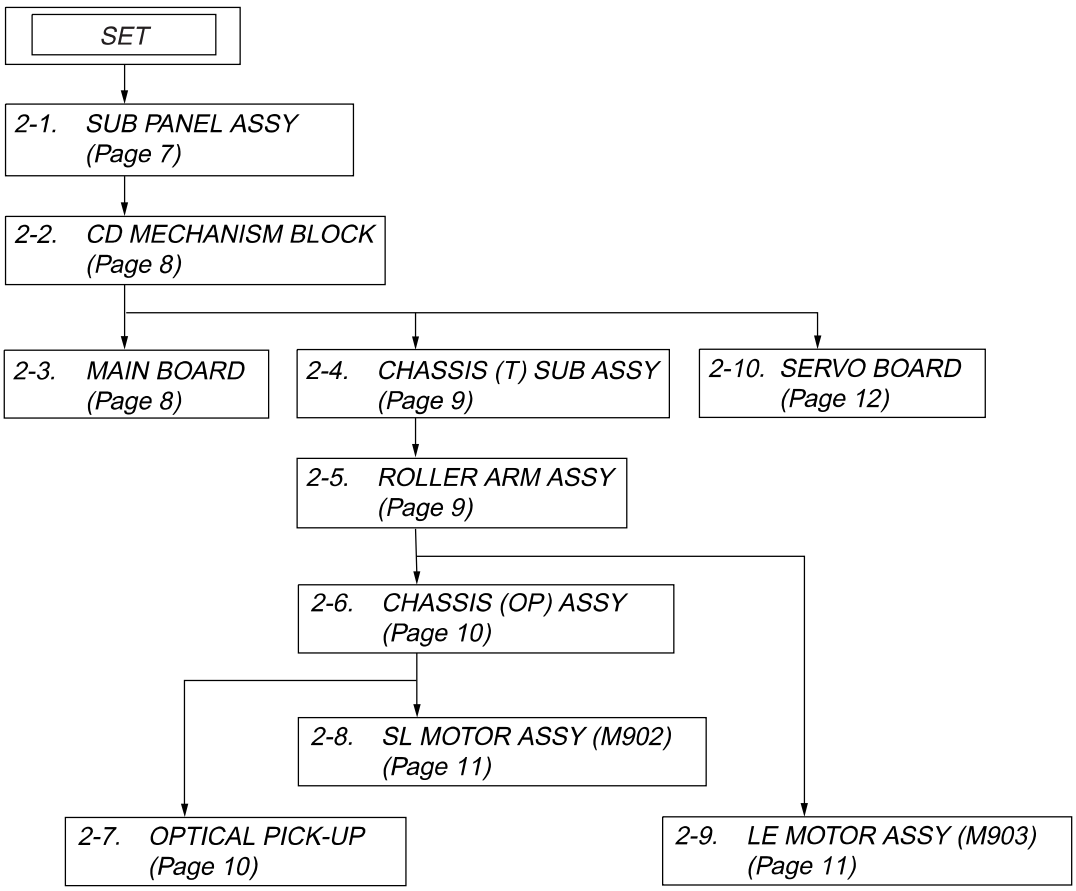
Instandhouden van het geheugen
Zolang de gele stroomkabel is aangesloten, blijft de stroomvoorziening van het geheugen intact, ook wanneer het contact van de auto wordt uitgeschakeld.

Opmerkingen betreffende het aansluiten van de luidsprekers
- *Zorg dat het apparaat is uitgeschakeld alvorens de luidsprekers aan te sluiten.*
- *Gebruik luidsprekers met een impedantie van 4 tot 8 Ohm en let op dat die het vermogen van de versterker kunnen verwerken. Als dit wordt verzuimd, kunnen de luidsprekers ernstig beschadigd raken.*
- *Verbind in geen geval de aansluitingen van de luidsprekers met het chassis van de auto en sluit de aansluitingen van de rechter- en linkerluidsprekers niet op elkaar aan.*
- *Verbind de aarddraad van dit apparaat niet met de negatieve (–) aansluiting van de luidsprekers.*
- *Probeer nooit de luidsprekers parallel aan te sluiten.*
- *Sluit geen actieve luidsprekers (met ingebouwde versterker) aan op de eindversterker-aansluiting van dit apparaat. Dit zal leiden tot beschadiging van de actieve luidsprekers. Sluit dus enkel passieve luidsprekers zonder ingebouwde versterker aan.*
- *Om defecten te vermijden mag u de bestaande luidsprekerbedrading in uw auto niet gebruiken wanneer er een gemeenschappelijke negatieve (–) draad is voor de rechter- en linkerluidsprekers.*
- *Verbind de luidsprekerdraden niet met elkaar.*

Opmerking over aansluiten
Als de luidsprekers en versterker niet correct zijn aangesloten, wordt "FAILURE" in het display weergegeven. In dit geval moet u zorgen dat de luidsprekers en versterker correct zijn aangesloten.

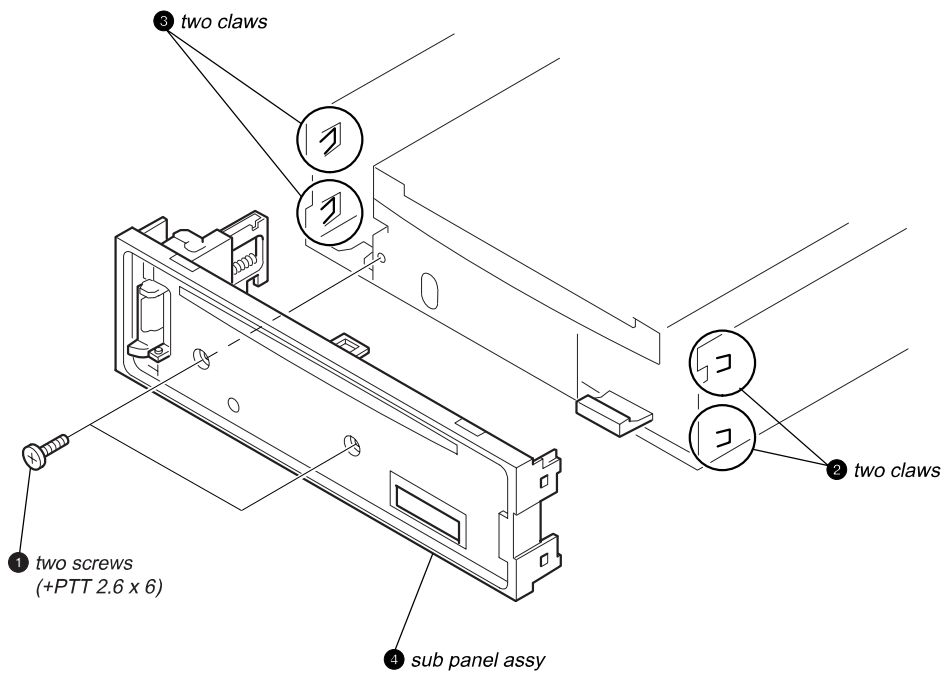
SECTION 2
DISASSEMBLY

Note : This set can be disassemble according to the following sequence.

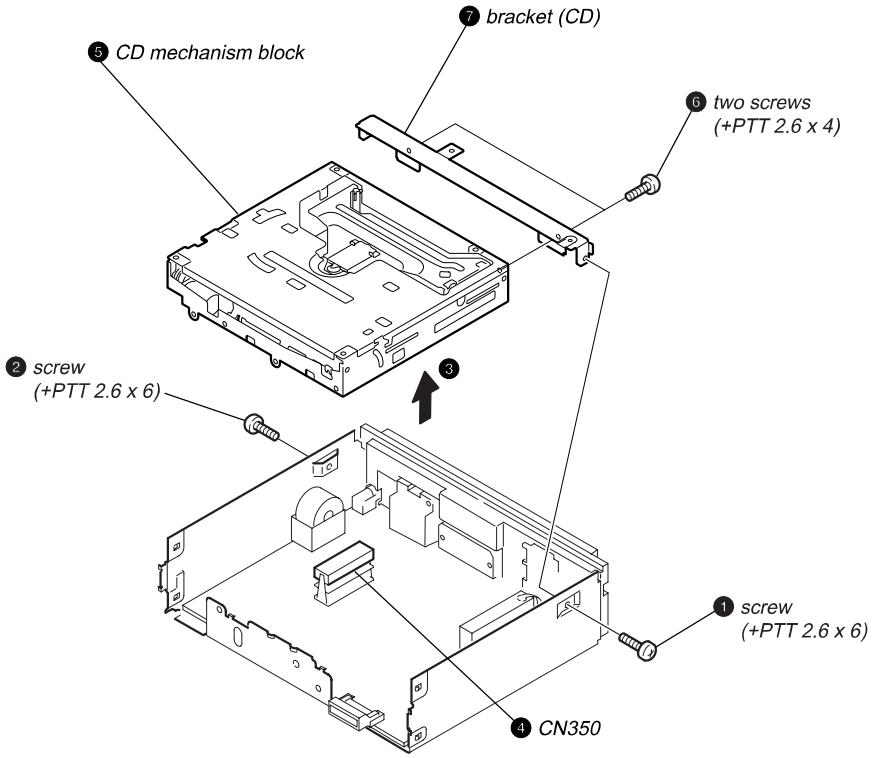

SET
2-1. SUB PANEL ASSY (Page 7)
2-2. CD MECHANISM BLOCK (Page 8)
2-3. MAIN BOARD (Page 8)
2-4. CHASSIS (T) SUB ASSY (Page 9)
2-10. SERVO BOARD (Page 12)
2-5. ROLLER ARM ASSY (Page 9)
2-6. CHASSIS (OP) ASSY (Page 10)
2-8. SL MOTOR ASSY (M902) (Page 11)
2-7. OPTICAL PICK-UP (Page 10)
2-9. LE MOTOR ASSY (M903) (Page 11)

Note : Follow the disassembly procedure in the numerical order given.

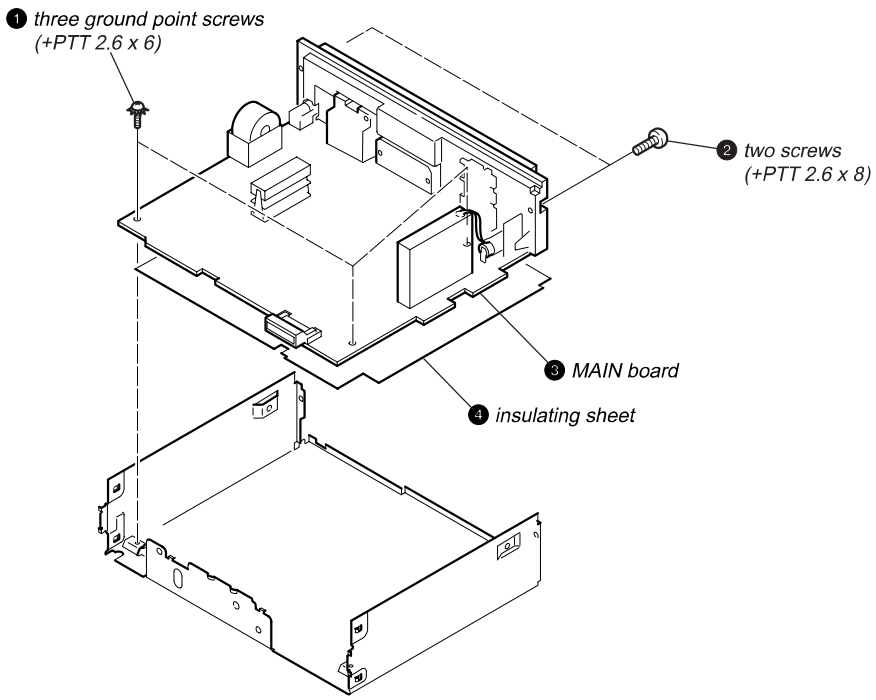
2-1. SUB PANEL ASSY



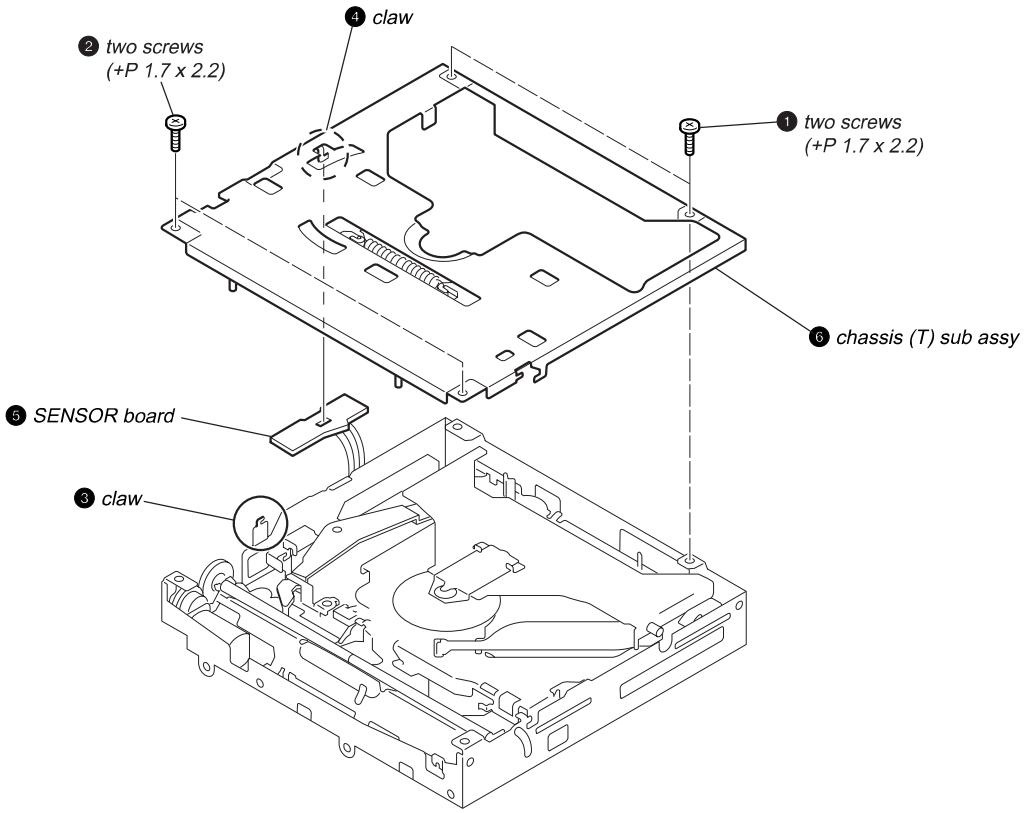
2-2. CD MECHANISM BLOCK



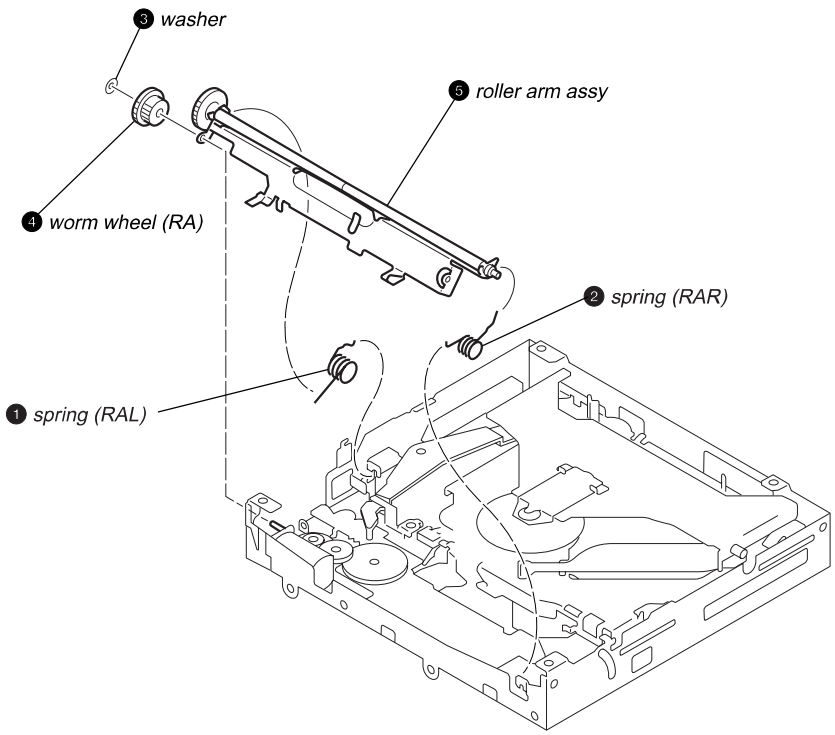
2-3. MAIN BOARD



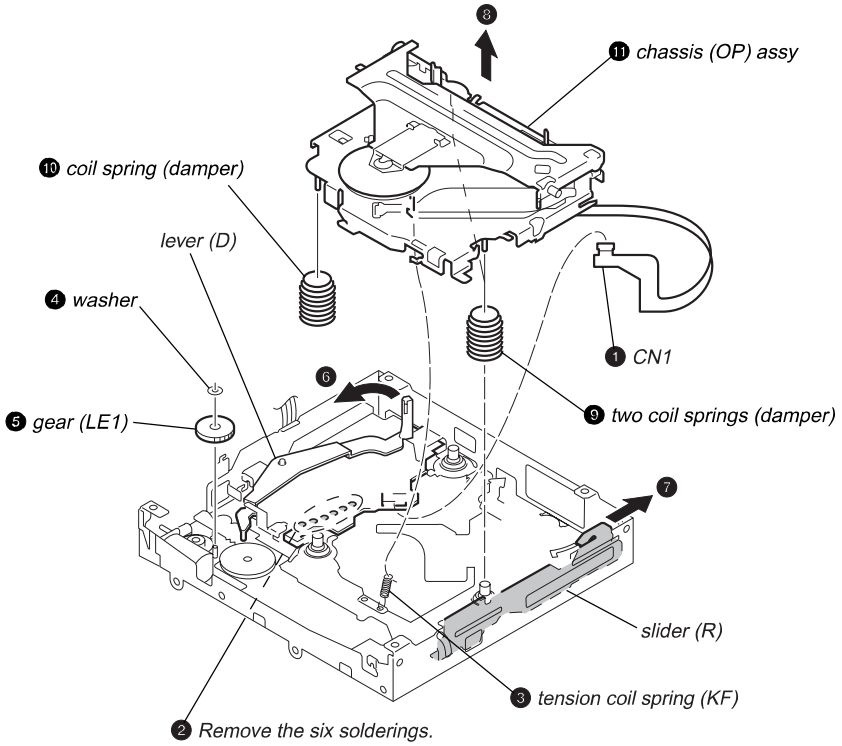
2-4. CHASSIS (T) SUB ASSY



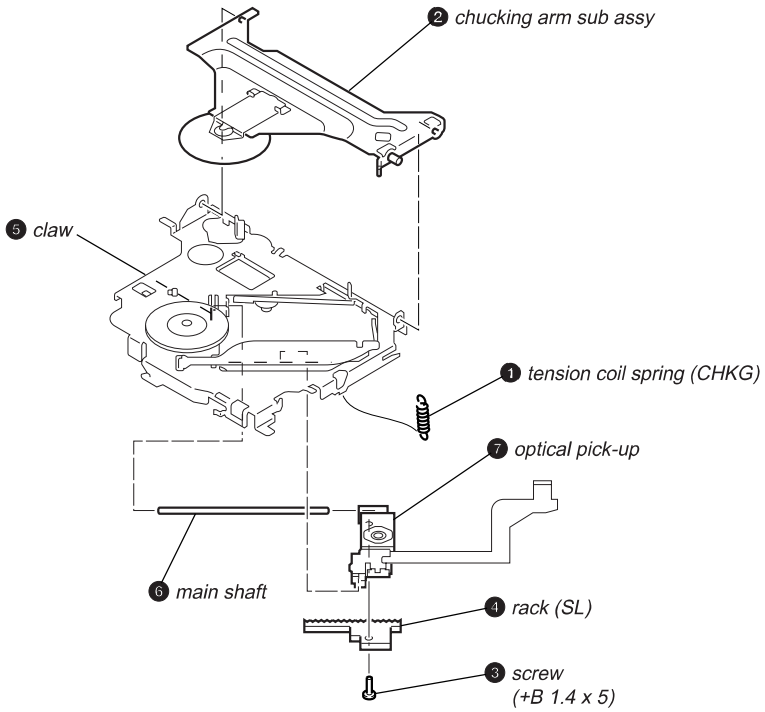
2-5. ROLLER ARM ASSY



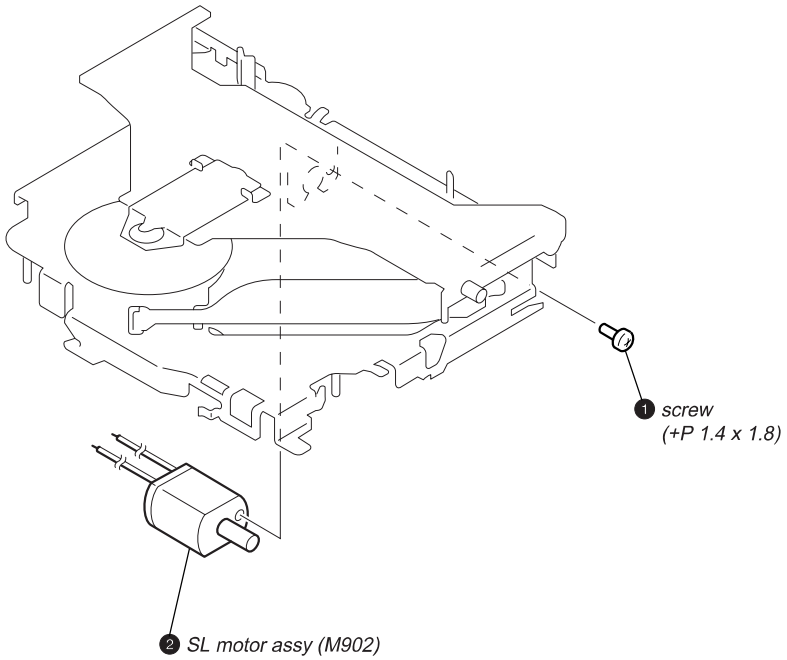
2-6. CHASSIS (OP) ASSY



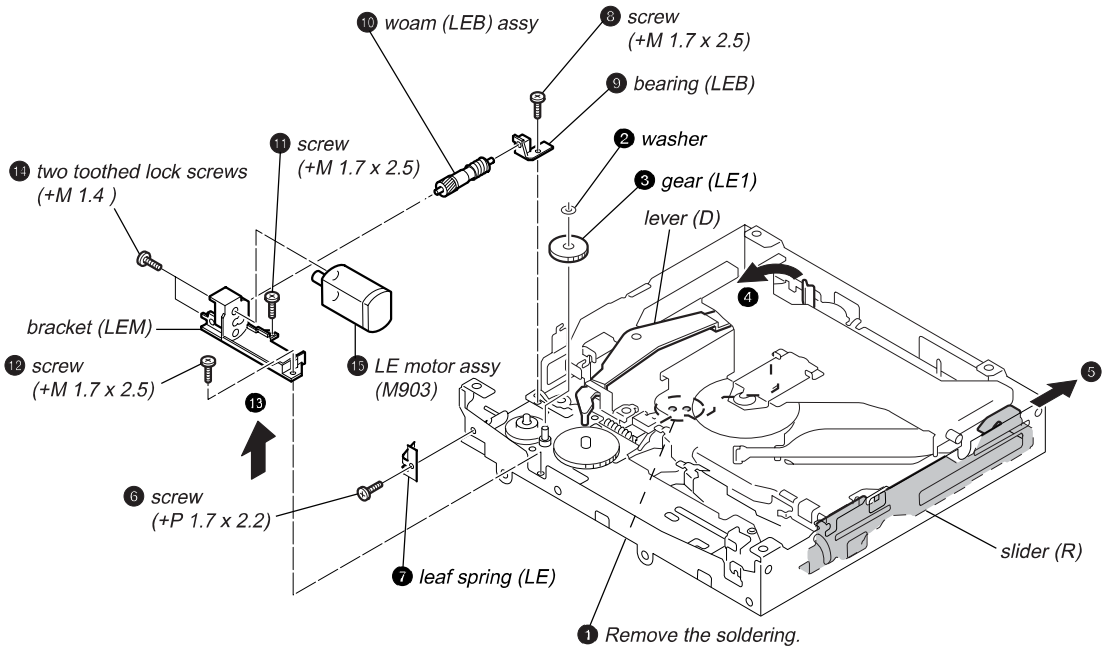
2-7. OPTICAL PICK-UP



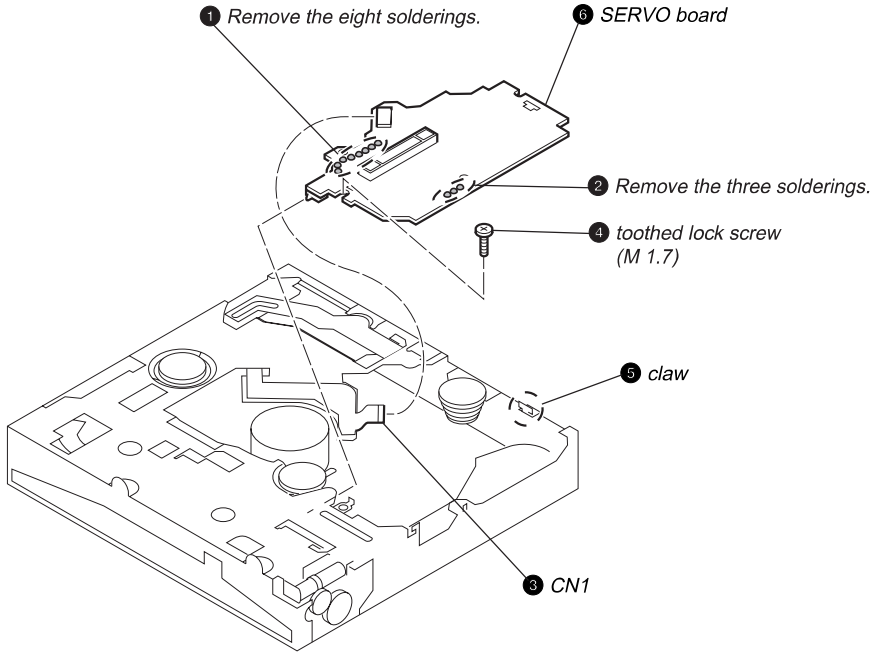
2-8. SL MOTOR ASSY (M902)



2-9. LE MOTOR ASSY (M903)



2-10. SERVO BOARD



SECTION 3
DIAGRAMS

3-1. IC PIN DESCRIPTIONS

• IC3 CXD3059BR (DIGITAL SERVO/DIGITAL SIGNAL PROCESSOR) (SERVO BOARD (1/2))

Pin No.	Pin Name	I/O	Pin Description
1	MIRR	I/O	Mirror signal input/output (Not used in this set)
2	DFCT	I/O	Defect signal input/output (Not used in this set)
3	FOK	I/O	Focus OK signal input/output
4	VSS	—	Ground
5	LOCK	I/O	Lock signal input/output (Not used in this set)
6	MDP	O	Spindle motor servo control signal output
7	SSTP	I	Disc most inner detection signal input (Fixed at L in this set)
8	IOVSS1	—	Digital ground
9	SFDR	O	Sled drive signal output (FWD direction)
10	SRDR	O	Sled drive signal output (REV direction)
11	TFDR	O	Tracking drive signal output (FWD direction)
12	TRDR	O	Tracking drive signal output (REV direction)
13	FFDR	O	Focus drive signal output (FWD direction)
14	FRDR	O	Focus drive signal output (REV direction)
15	IOVDD1	—	Digital power supply pin (+3.3 V)
16	AVDD0	—	Analog power supply pin (+3.2 V)
17	AVSS0	—	Analog ground
18	NC	—	Not used. (Open)
19	E	I	E signal input
20	F	I	F signal input
21	TEI	I	Tracking error signal input
22	TEO	O	Tracking error signal output
23	FEI	I	Focus error signal input
24	FEO	O	Focus error signal output
25	VC	I/O	VC voltage output/Center voltage input
26	A	I	A signal input
27	B	I	B signal input
28	C	I	C signal input
29	D	I	D signal input
30	NC	—	Not used. (Open)
31	AVDD4	—	Analog power supply pin (+3.2 V)
32	RFDCO	I/O	RFDC signal input/output (Not used in this set)
33	PDSENS	I	Reference voltage input (Fixed at L in this set)
34	AC_SUM	O	RFAC summing amplifier signal output
35	EQ_IN	I	Equalizer circuit signal input
36	LD	O	APC amplifier signal output
37	PD	I	APC amplifier signal input
38	NC	—	Not used. (Open)
39	RFC	I	EQ cut off frequency adjustment input
40	AVSS4	—	Analog ground
41	RFACO	O	RFAC signal output
42	RFACI	I	RFAC signal input
43	AVDD3	—	Analog power supply pin (+3.2 V)
44	BIAS	I	Asymmetry circuit constant current input
45	ASYI	I	Asymmetry comparate voltage input
46	ASYO	O	EFM full swing signal output
47	VPCO	O	Charge pump output
48	VCTL	I	VCO2 control voltage input
49	AVSS3	—	Analog ground
50	CLTV	I	VCO1 control voltage input
51	FILO	O	Filter signal output

Pin No.	Pin Name	I/O	Pin Description
52	FILI	I	Filter signal input
53	PCO	O	Charge pump output
54	AVDD5	—	Analog power supply pin (+3.3 V)
55	DDVROUT	O	DC/DC converter output
56	DDVRSEN	I	DC/DC converter output voltage monitor signal input
57	AVSS5	—	Analog ground
58	DDCR	I	Reset signal input
59	NC	—	Not used. (Open)
60	BCKI	I	D/A interface bit clock signal input
61	PCMDI	I	D/A interface serial data signal input
62	LRCKI	I	D/A interface LR clock signal input
63	LRCK	O	D/A interface LR clock signal output
64	VSS	—	Ground
65	PCMD	O	D/A interface serial data signal output
66	BCK	O	D/A interface bit clock signal output
67	VDD	—	Power supply pin (+2.6 V)
68	EMPH	O	Not used. (Open)
69	EMPHI	I	Not used. (Fixed at L in this set)
70	IOVDD2	—	Digital power supply pin (+3.3 V)
71	DOUT	—	Digital out signal output (Not used in this set)
72, 73	TEST	I	Test pin (Normally, fixed at L)
74	IOVSS2	—	Digital ground
75	NC	—	Not used. (Open)
76	XVSS	—	Ground
77	XTAO	O	Master clock signal output (16.9344 MHz)
78	XTAI	I	Master clock signal input (16.9344 MHz)
79	XVDD	—	Power supply pin (+2.6 V)
80	AVDD1	—	Analog power supply pin (+3.3 V)
81	AOUT1	O	L channel analog signal output
82	VREFL	O	L channel reference voltage output
83, 84	AVSS1,AVSS2	—	Analog ground
85	VREFR	O	R channel reference voltage output
86	AOUT2	O	R channel analog signal output
87	AVDD2	—	Analog power supply pin (+3.3 V)
88	NC	—	Not used. (Open)
89	IOVDD0	—	Digital power supply pin (+3.3 V)
90	RMUT	O	R channel “0” detection flug output
91	LMUT	O	L channel “0” detection flug output
92	NC	—	Not used. (Open)
93	XTSL	I	Sub clock signal input (Fixed at L in this set)
94	IOVSS0	—	Digital ground
95	XTACN	I	Oscillation circuit control signal input (Fixed at H in this set)
96	SQSO	O	Sub 80 bit, PCM peak and level data signal output
97	SQCK	I	Clock signal input
98	SBSO	O	Sub P-W serial data signal output (Not used in this set)
99	EXCK	I	Clock signal input (Not used in this set)
100	XRST	I	System reset signal input
101	SYSM	I	Mute signal input (Fixed at L in this set)
102	DATA	I	Serial data signal input
103	VSS	—	Ground
104	XLAT	I	Latch signal input
105	CLOK	I	Serial data transfer clock signal input
106	VDD	—	Power supply pin (+2.6 V)

Pin No.	Pin Name	I/O	Pin Description
107	SENS	O	SENS signal output
108	SCLK	I	Clock signal input
109	ATSK	I/O	Input/output for anti-shock. (Fixed at L in this set)
110	WFCK	O	WFCK signal output (Not used in this set)
111	XUGF	O	XUGF signal output (Not used in this set)
112	XPCK	O	XPCK signal output (Not used in this set)
113	GFS	O	GFS signal output
114	C2PO	O	C2PO signal output
115	SCOR	O	Sub code sync signal output
116	VDD	—	Power supply pin (+2.6 V)
117	C4M	O	4.2366 MHz signal output (Not used in this set)
118	WDCK	O	Word clock signal output (Not used in this set)
119	COUT	I/O	Track count signal output/output (Not used in this set)
120	NC	—	Not used. (Open)

• IC500 MN101E01JKD (SYSTEM CONTROL) (MAIN BOARD (2/2))

Pin No.	Pin Name	I/O	Pin Description
1	DAVDD	—	D/A converter power supply (+) pin (+3.3 V)
2	NCO	O	Not used. (Open)
3	DAVSS	—	D/A converter power supply (–) pin
4	UNISO	O	SONY-BUS data output (Not used in this set)
5	UNISI	I	SONY-BUS data input (Not used in this set)
6	UNICKO	O	SONY-BUS clock output (Not used in this set)
7	RETRA_SW	I	Not used. (Open)
8, 9	NCO	O	Not used. (Open)
10	VDD1	—	Power supply pin (+3.3 V)
11	MMOD	I	Not used. (Fixed at L in this set)
12	OSCOUT	O	Main clock output (27.648 MHz)
13	OSCIN	I	Main clock input (27.648 MHz)
14	VSS1	—	Ground
15	XIN	I	Sub clock input (32.768 kHz)
16	XOUT	O	Sub clock output (32.768 kHz)
17	VDD2	—	Power supply pin (+3.3 V)
18	MOD1	—	Not used. (Fixed at H in this set)
19	$\overline{\text{RESET}}$	I	Microcomputer reset input
20	RCIN1	I	Rotary commander SHIFT key input
21	$\overline{\text{ACCIN}}$	I	Accessory power supply detection input
22	$\overline{\text{TESTIN}}$	I	Test mode detection input
23	TELATT	I	Telephone attenuator detection input
24	ATT	O	Audio mute control output
25	$\overline{\text{ADON}}$	O	A/D converter power supply control output
26	NCO	O	Not used. (Open)
27	KEYACK	I	Key acknowledge detection input
28	TUATTIN	I	Mute zero cross detection input from tuner unit.
29	CDON	I	Servo power supply control input from CD system control IC.
30	CDMON	I	Loading 6V power supply control input from CD system control IC.
31	BUIN	I	Backup power supply detection input
32 to 35	NCO	O	Not used. (Open)
36	$\overline{\text{BUSON}}$	O	BUS ON output to CD system control IC.
37	$\overline{\text{SYSRST}}$	O	System reset output to CD system control IC.
38 to 41	NCO	O	Not used. (Open)
42	Z_MUTE	I	Mute zero cross detection input from CD system control IC.
43 to 49	NCO	O	Not used. (Open)
50	BBESEL	I	Not used. (Open)
51	NCO	O	Not used. (Open)
52	AREASEL1	I	Not used. (Open)
53	AREASEL0	I	Not used. (Open)
54 to 56	NCO	O	Not used. (Open)
57	EJECT_OK_SW	O	Eject OK output
58	$\overline{\text{PANELSW}}$	I	Front panel detach detection input (L: with front panel, H: without front panel)
59	DIAG	I	Mode input from power amp IC.
60	$\overline{\text{VOLATT}}$	O	Attenuator control output to electronic volume IC.
61	$\overline{\text{NOSESW}}$	O	Not used. (Open)
62	NCO	O	Not used. (Open)
63	VSS2	—	Ground
64	TUATT	O	Tuner mute control output
65	NCO (TUON)	O	Not used. (Open)
66	NSMASK	O	Noise mask output
67	E2P_CKO	O	Serial clock output to EEPROM communication.

Pin No.	Pin Name	I/O	Pin Description
68	E2P_SIO	I/O	Serial data input/output with EEPROM communication.
69	DOORIND	O	Not used. (Open)
70	AMPSTB	O	Standby control output to power amp IC.
71	NCO	O	Not used. (Open)
72	FLS.SO/LCDSO	O	Serial data output to LCD driver IC.
73	FLS.SI/LCDCE	O	Chip enable output to LCD driver IC.
74	LCDCKO	O	Serial clock output to LCD driver IC.
75 to 78	NCO	O	Not used. (Open)
79	I2C_SIO	I/O	I2C bus serial data input/output
80	NCO	O	Not used. (Open)
81	I2C_CKO	O	I2C bus serial clock output
82	DAVN	I	RDS data block synchronization detection input
83	SIRCS	I	SIRCS signal input
84	NCO	O	Not used. (Open)
85	BEEP	O	Beep output to power amp IC.
86 to 88	NCO	O	Not used. (Open)
89	VDD3	—	Power supply pin (+3.3 V)
90	NCO	O	Not used. (Open)
91	VSS3	—	Ground
92	QUALITY	I	Noise detection input
93	VSM	I	S-meter voltage detection input
94, 95	KEYIN1, 0	I	Key input 1, 0
96	RCIN0	I	Rotary commander key input
97 to 99	NCO	O	Not used. (Open)
100	VREF+	—	A/D converter power supply (+) pin (+3.3 V)

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

for schematic diagram:

- All capacitors are in μF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- ▭ : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : MW
  ⇛ : CD

for printed wiring boards:

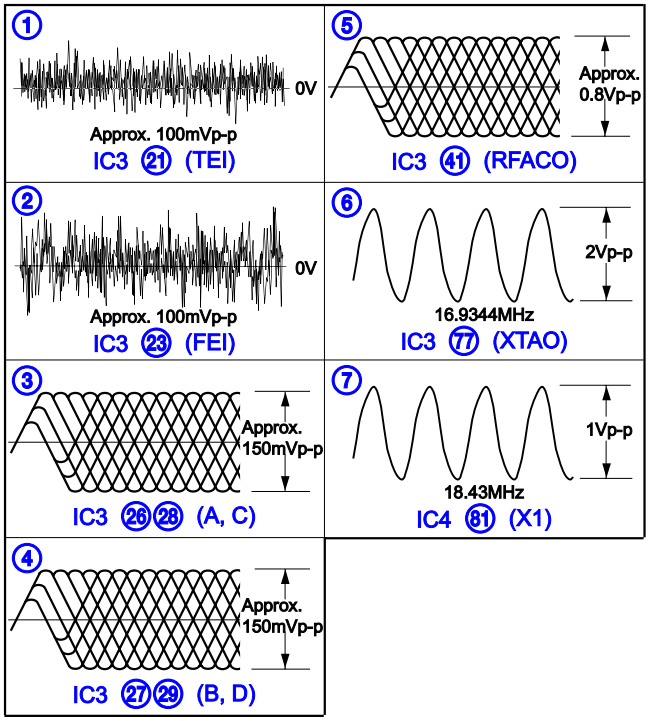
- o——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- O : Through hole.
- ▬ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

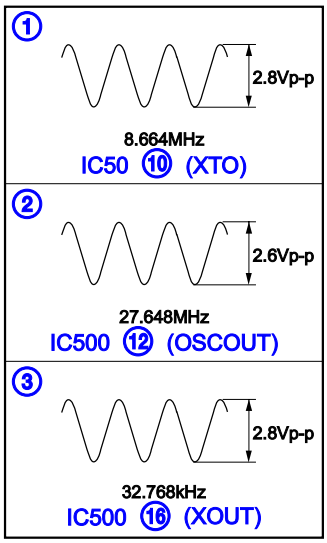
• Waveforms

— Servo Board —

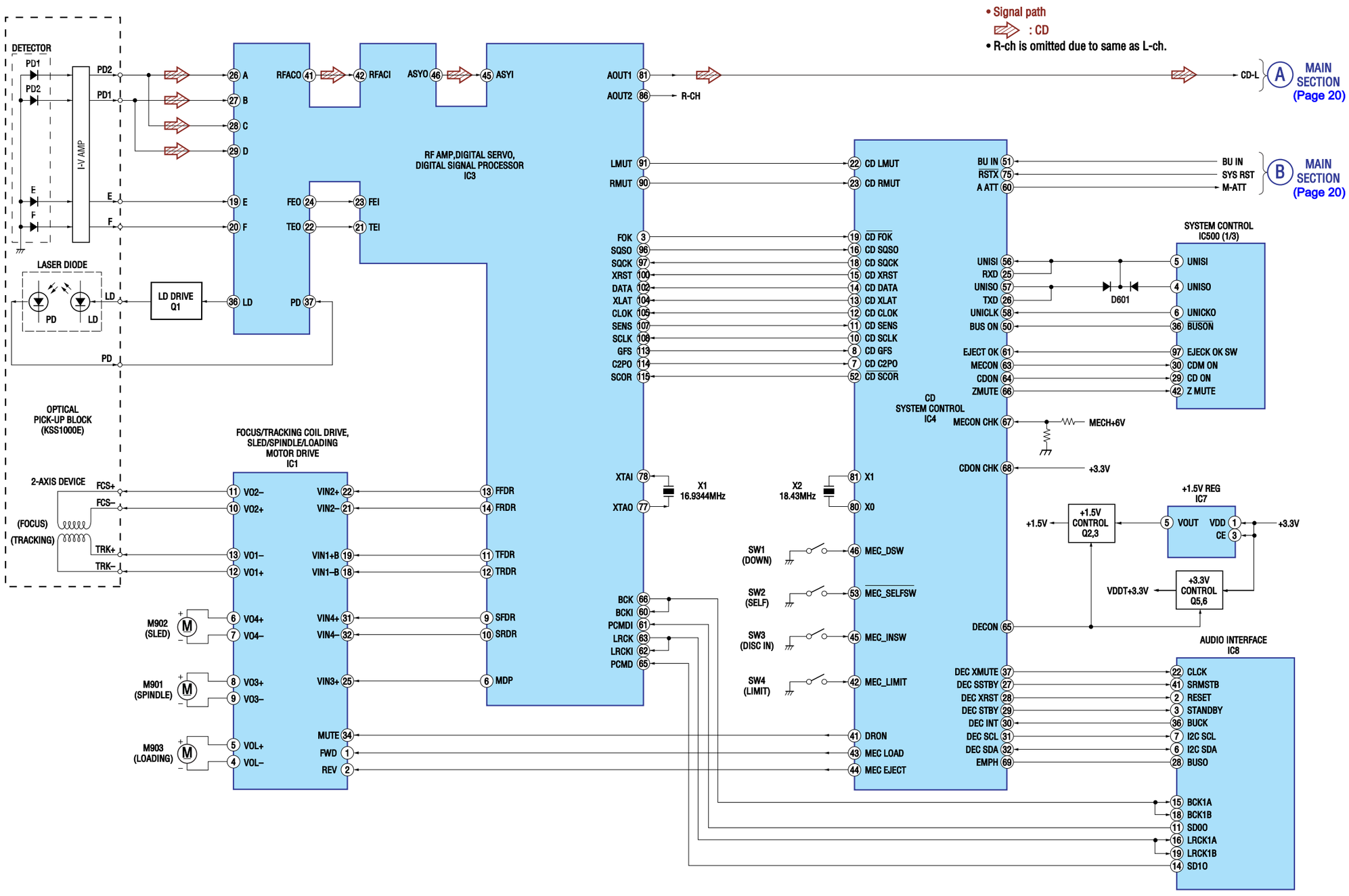
(MODE: CD PLAY)



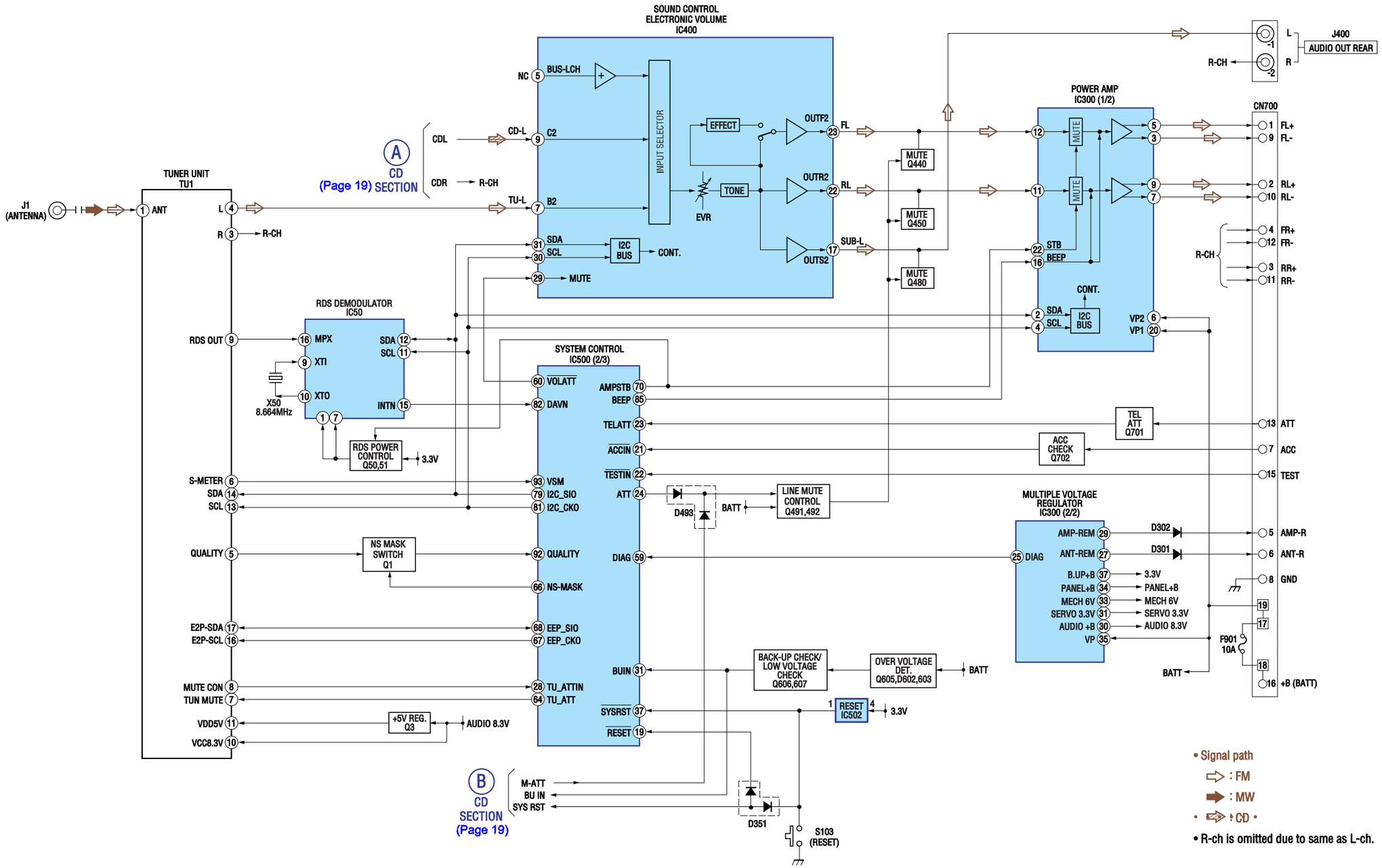
— Main Board —



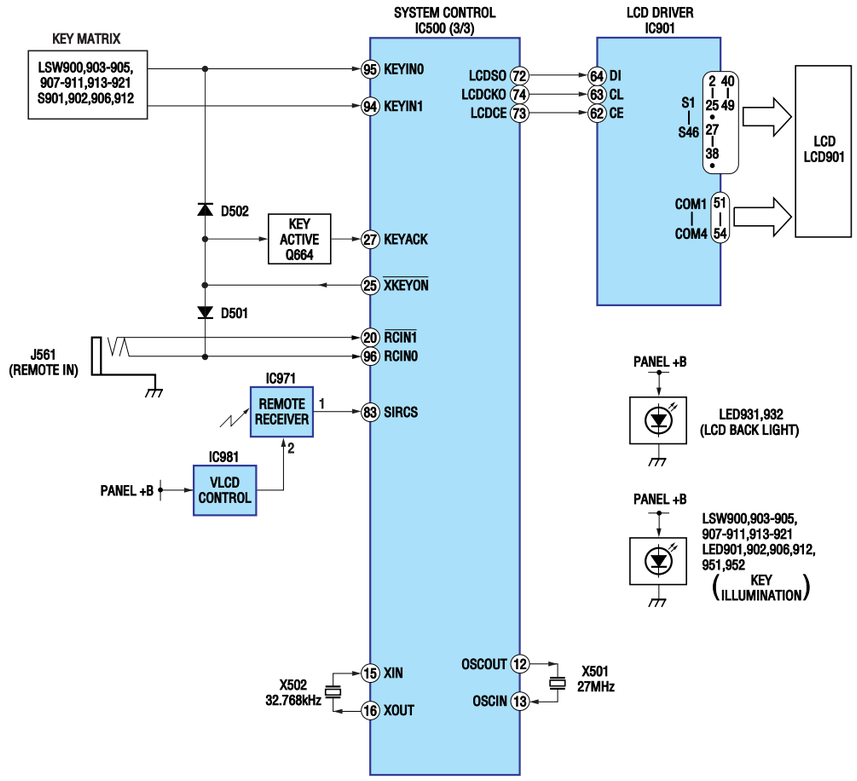
3-2. BLOCK DIAGRAM — CD SECTION —



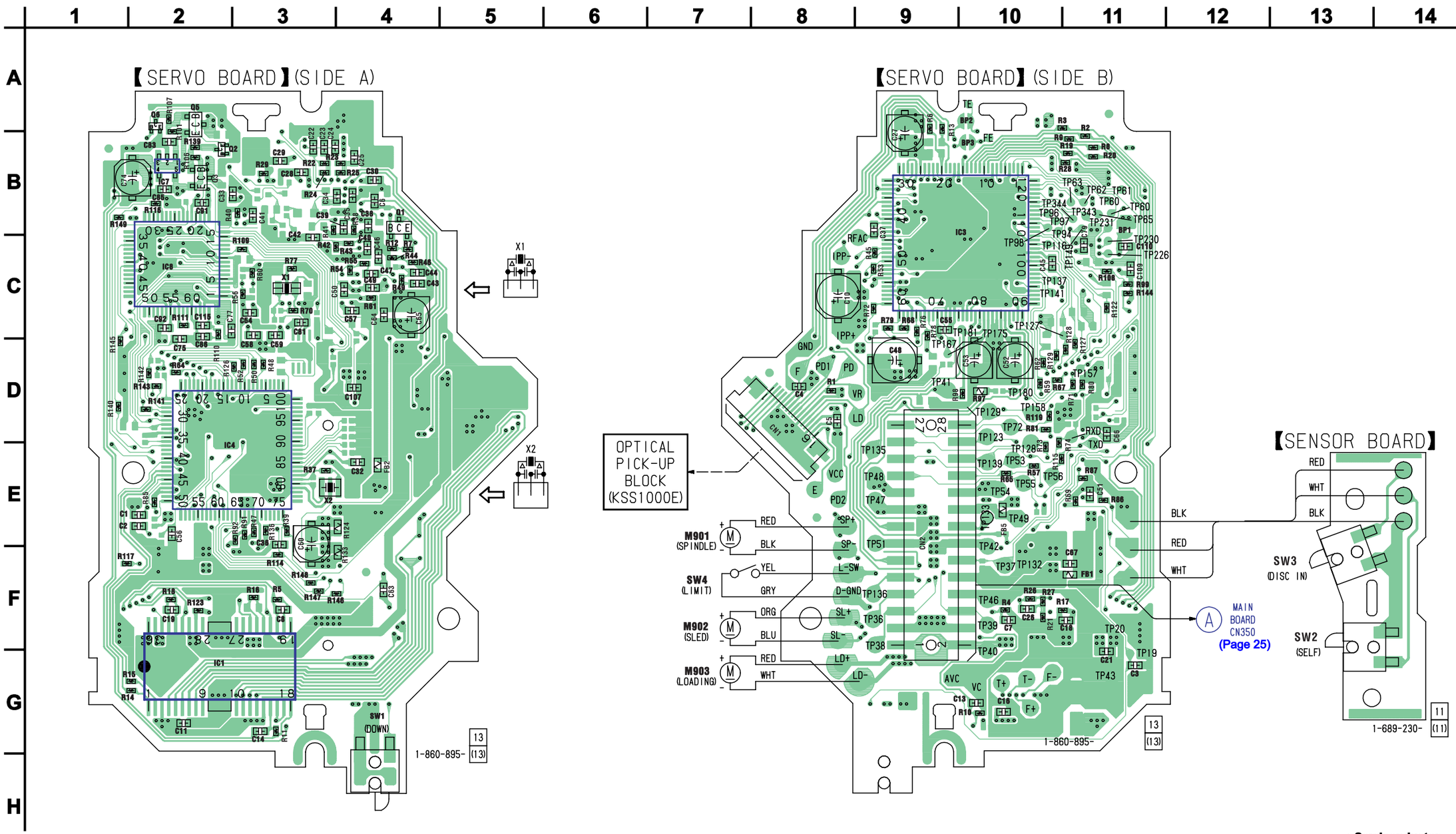
3-3. BLOCK DIAGRAM — TUNER SECTION —



3-4. BLOCK DIAGRAM — DISPLAY SECTION —



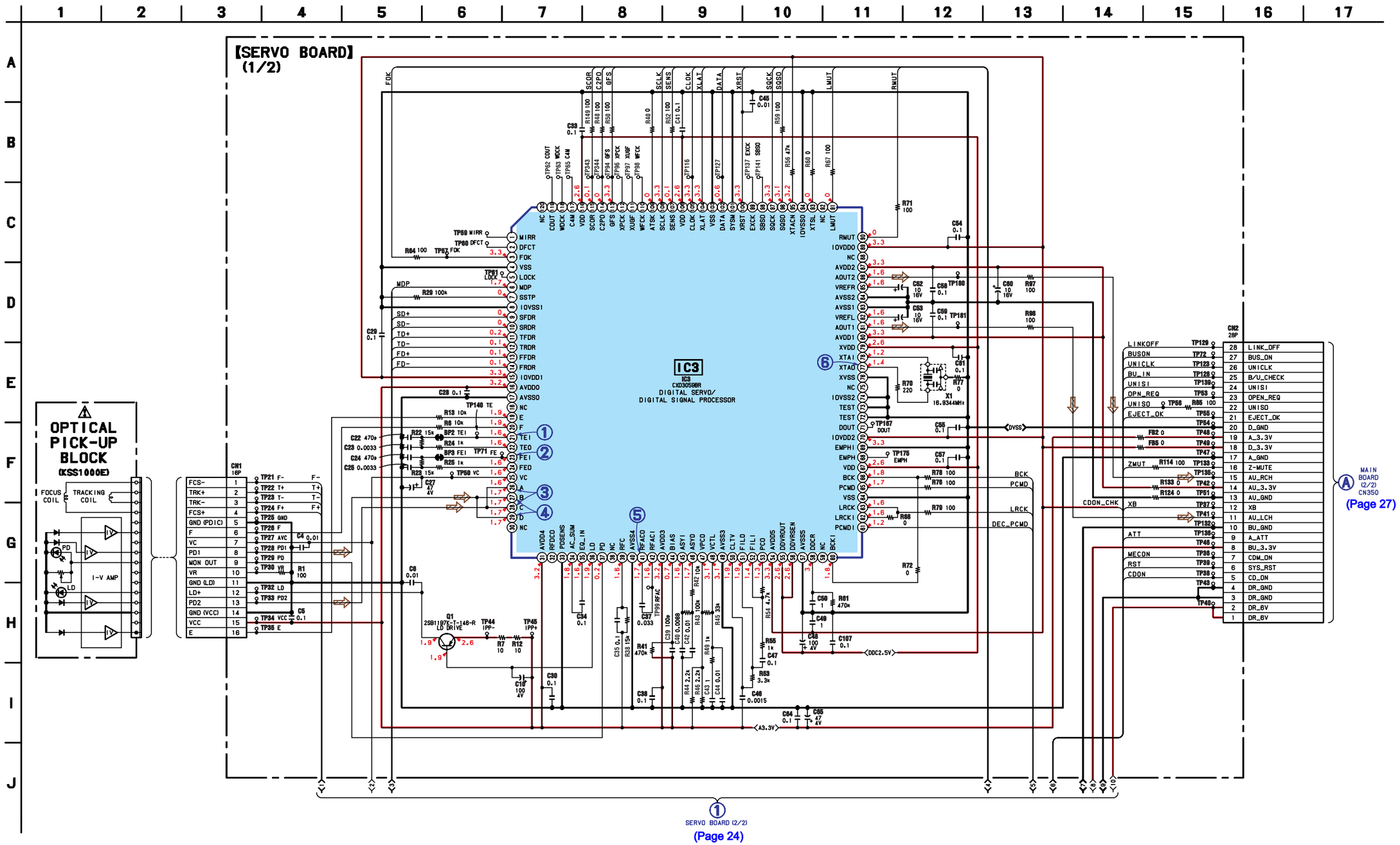
3-5. PRINTED WIRING BOARDS — CD MECHANISM SECTION — **• Refer to page 18 for Common Note for Printed Wiring Boards.** **: Uses unleaded solder.**



- **Semiconductor Location**

Ref. No.	Location
IC1	G-2
IC3	B-10
IC4	E-4
IC7	B-2
IC8	C-2
Q1	B-4
Q2	B-2
Q3	B-2
Q5	A-2
Q6	A-2

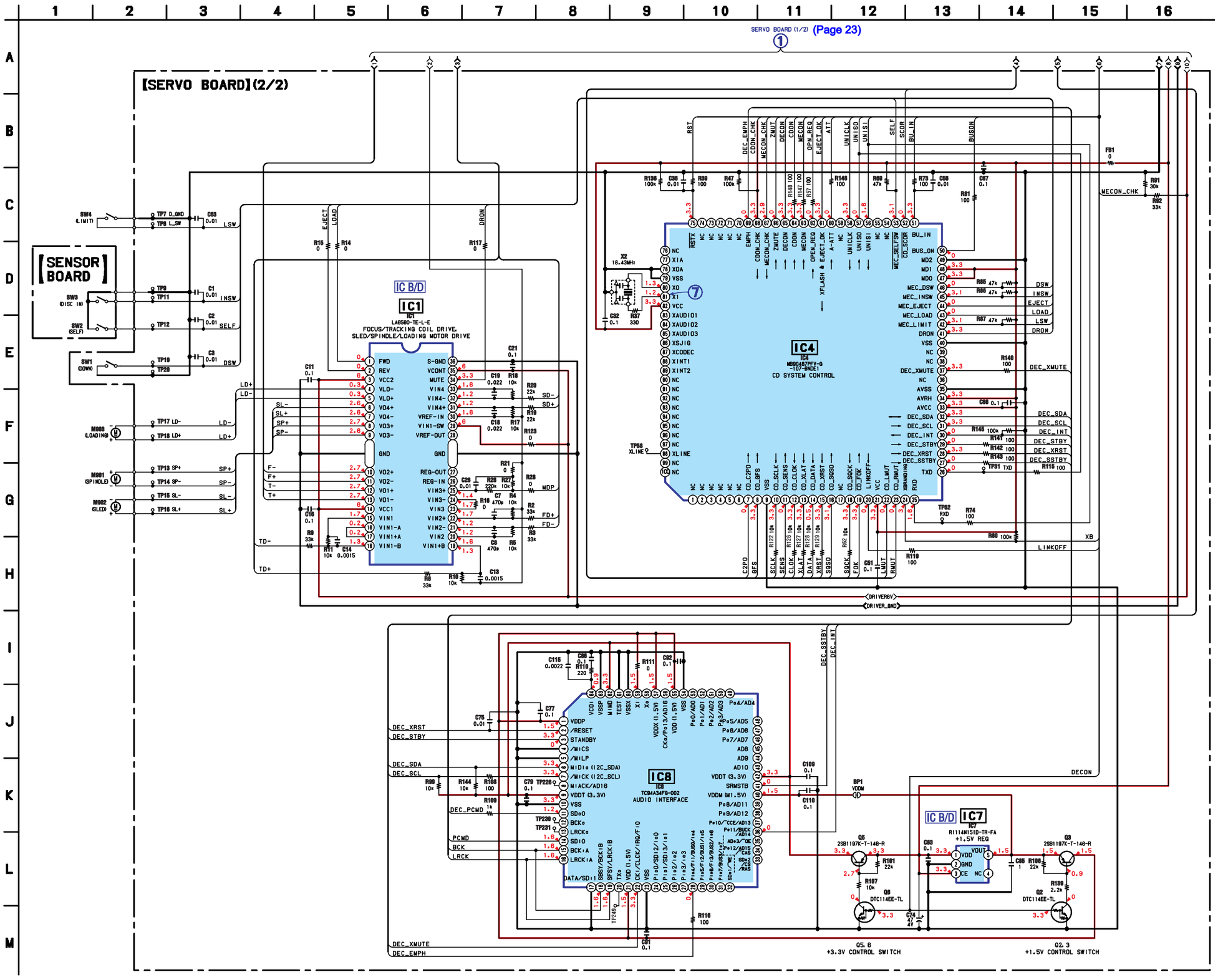
3-6. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (1/2) — • Refer to page 18 for Common Note on Schematic Diagram and Waveforms.



Note:
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : CD PLAY

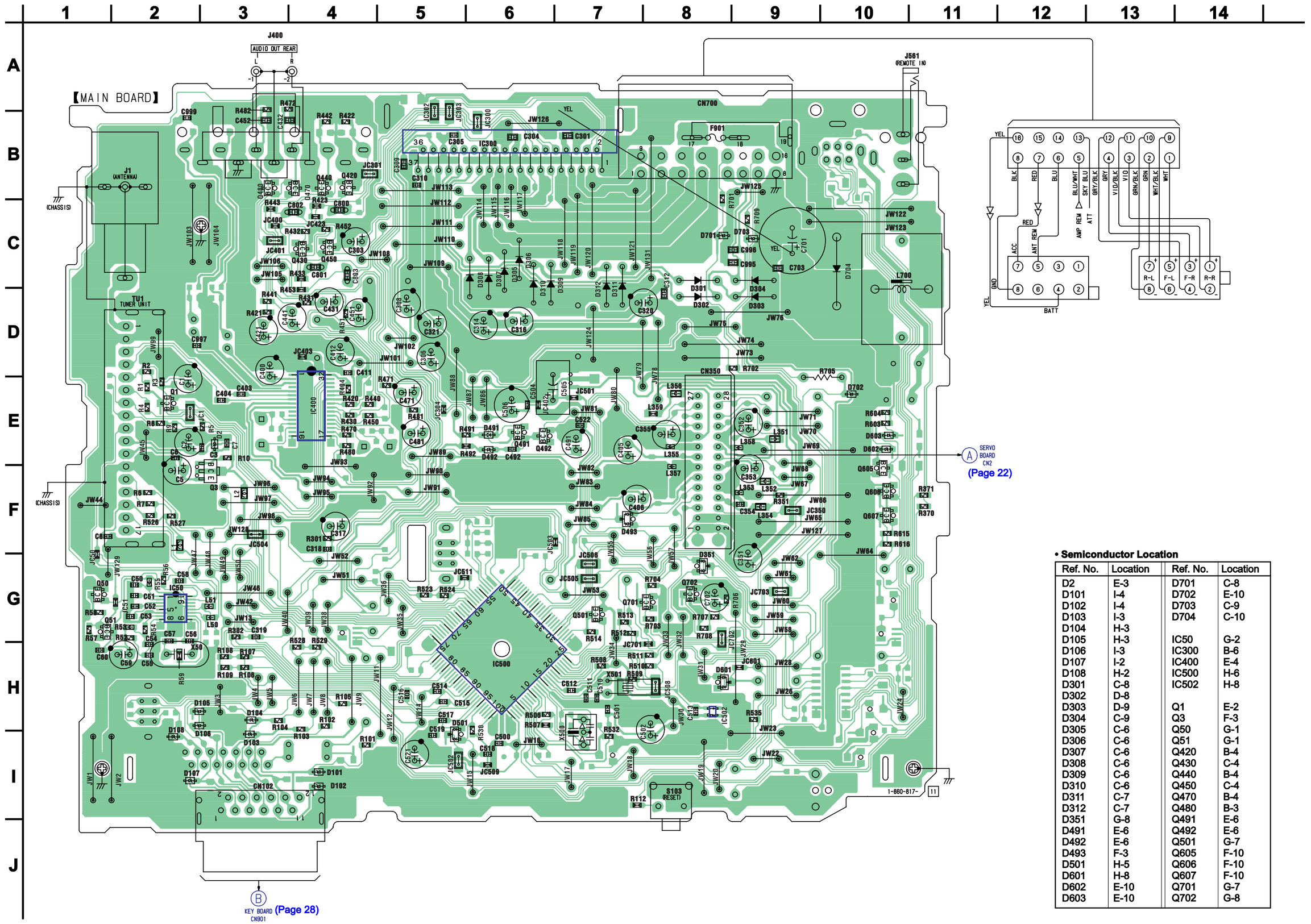
3-7. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (2/2) —

• Refer to page 18 for Common Note on Schematic Diagram and Waveforms.
• Refer to page 30 for IC Block Diagrams.



Note:
- Voltage is dc with respect to ground under no-signal conditions.
  no mark : CD PLAY

3-8. PRINTED WIRING BOARD — MAIN SECTION — • Refer to page 18 for Common Note on Printed Wiring Boards. : Uses unleaded solder.

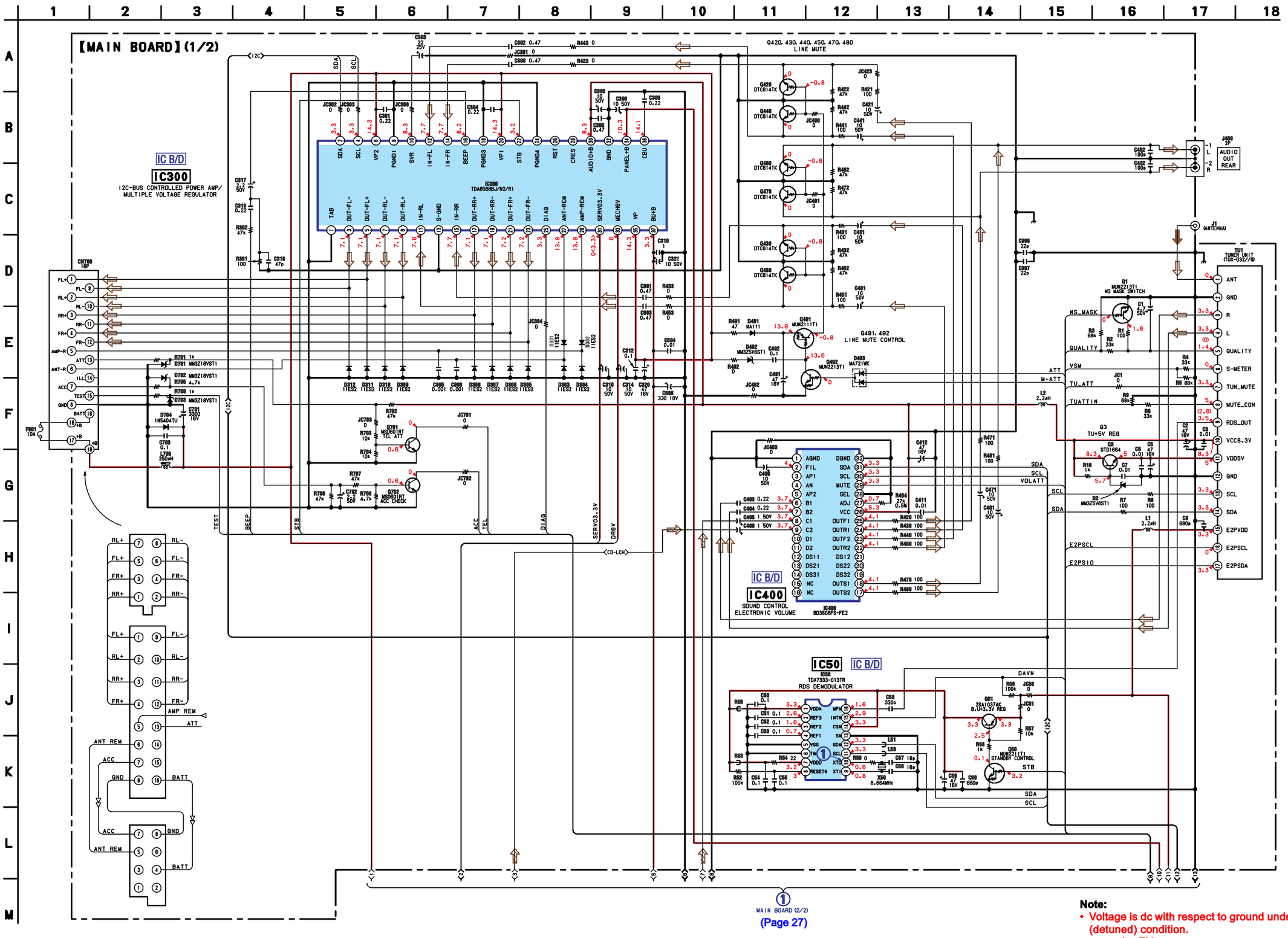


• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D2	E-3	D701	C-8
D101	I-4	D702	E-10
D102	I-4	D703	C-9
D103	I-3	D704	C-10
D104	H-3		
D105	H-3	IC50	G-2
D106	I-3	IC300	B-6
D107	I-2	IC400	E-4
D108	H-2	IC500	H-6
D301	C-8	IC502	H-8
D302	D-8		
D303	D-9	Q1	E-2
D304	C-9	Q3	F-3
D305	C-6	Q50	G-1
D306	C-6	Q51	G-1
D307	C-6	Q420	B-4
D308	C-6	Q430	C-4
D309	C-6	Q440	B-4
D310	C-6	Q450	C-4
D311	C-7	Q470	B-4
D312	C-7	Q480	B-3
D351	G-8	Q491	E-6
D491	E-6	Q492	E-6
D492	E-6	Q501	G-7
D493	F-3	Q605	F-10
D501	H-5	Q606	F-10
D601	H-8	Q607	F-10
D602	E-10	Q701	G-7
D603	E-10	Q702	G-8

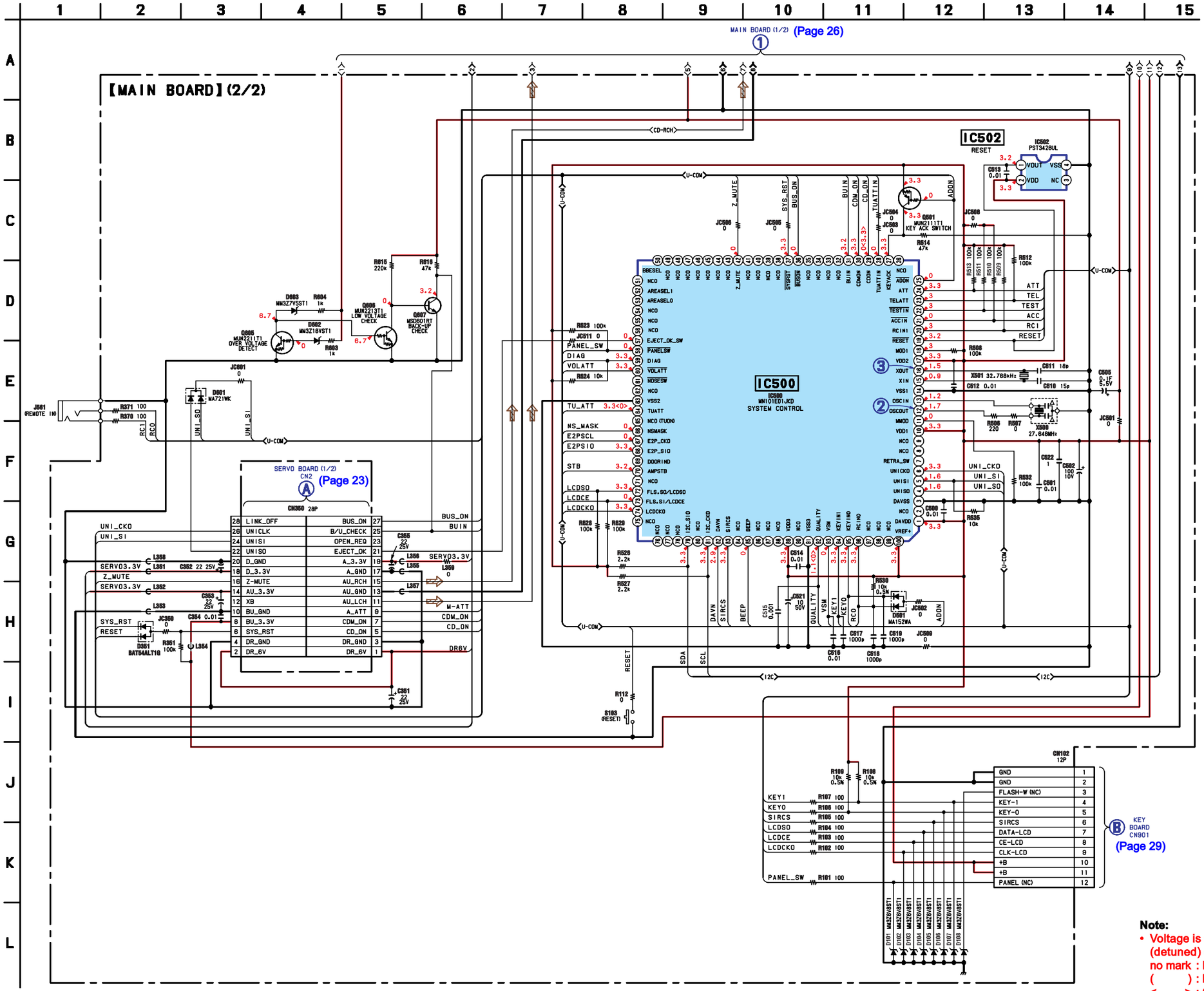
3-9. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) —

• Refer to page 18 for Common Note on Schematic Diagram and Waveforms.
• Refer to page 30 for IC Block Diagrams.



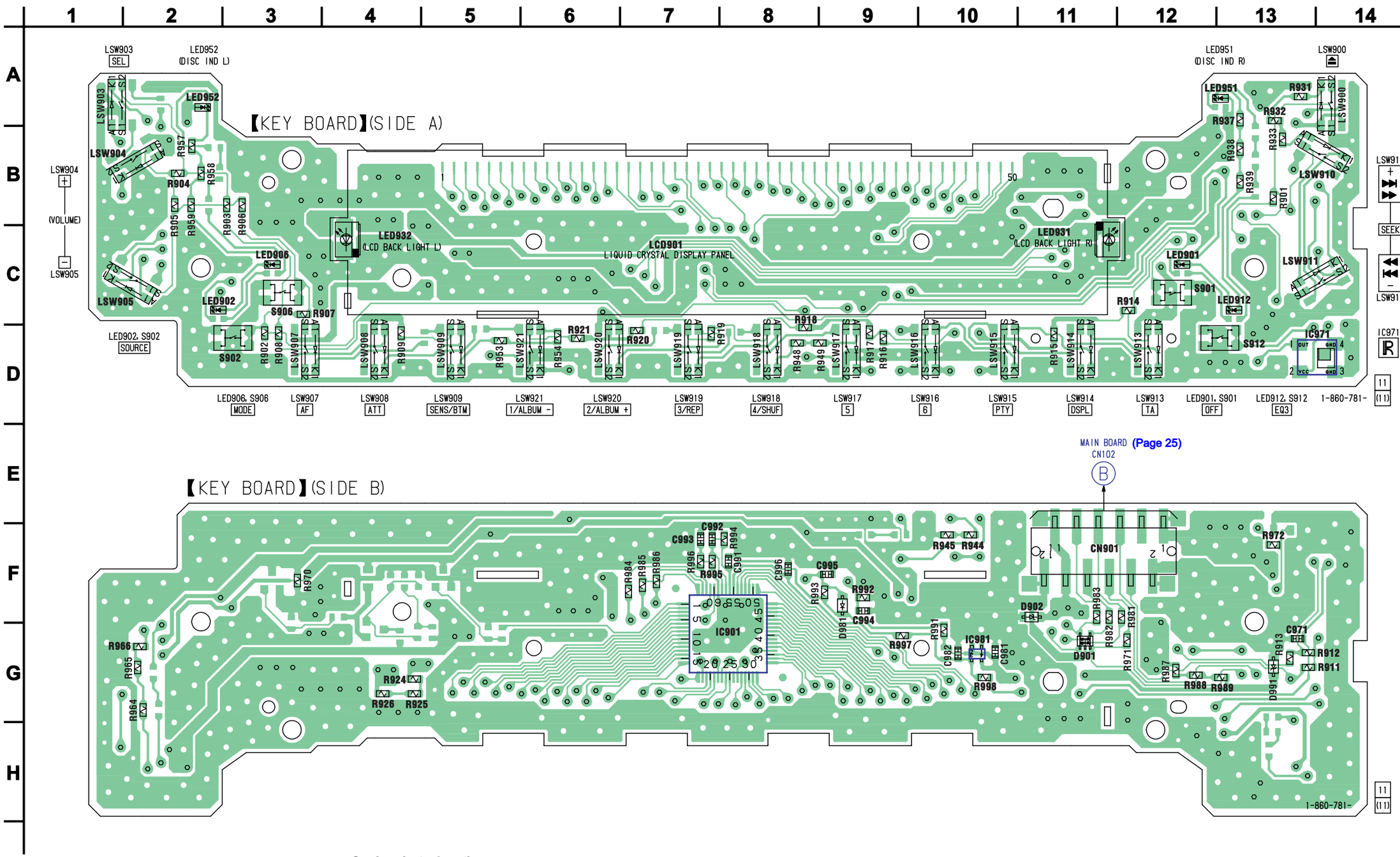
Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : MW
  < > : CD PLAY

3-10. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 18 for Common Note on Schematic Diagram and Waveforms.



Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : MW
  < > : CD PLAY

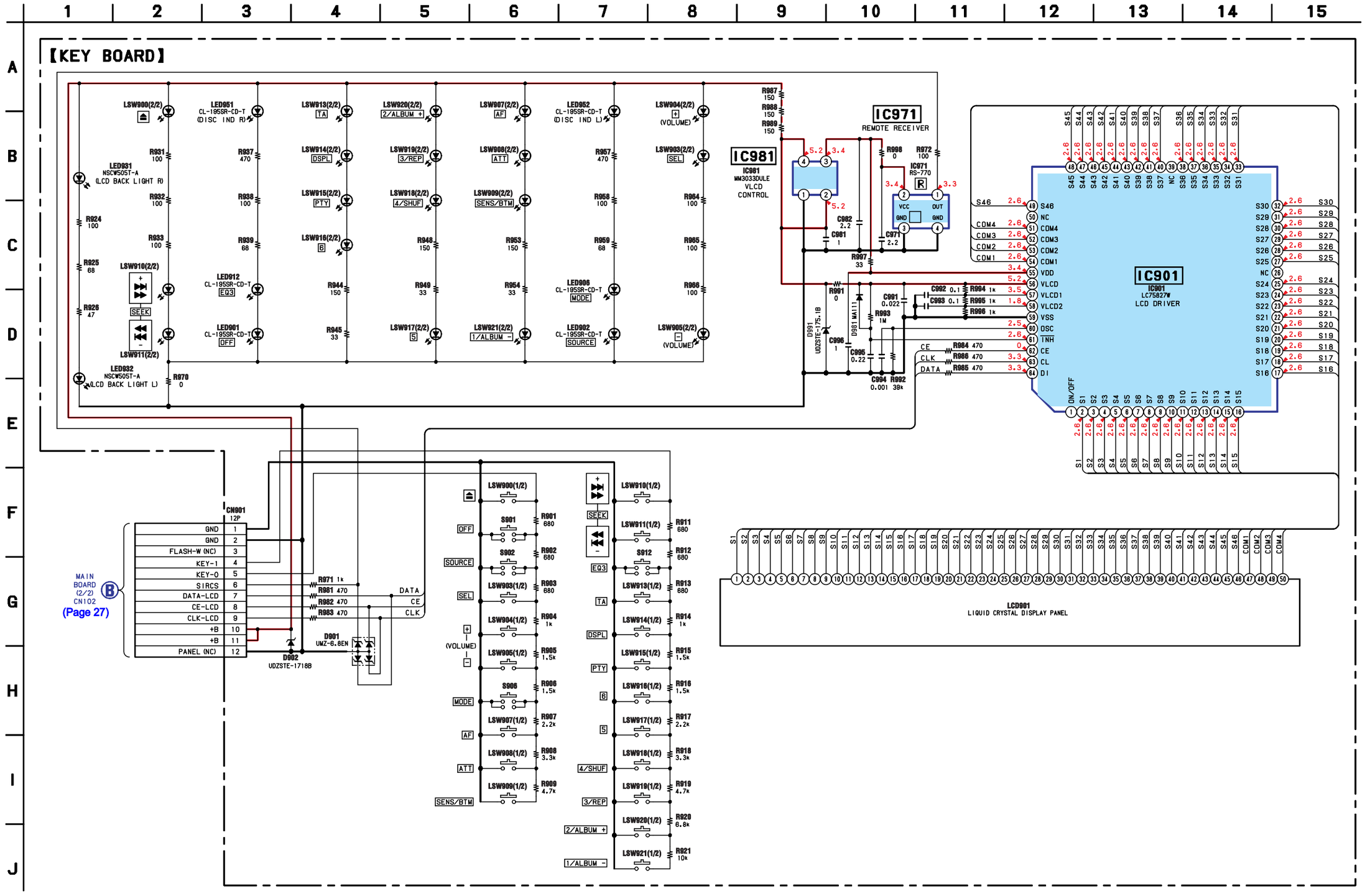
3-11. PRINTED WIRING BOARD — KEY SECTION — • Refer to page 18 for Common Note on Printed Wiring Boards. : Uses unleaded solder.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D901	G-11	LED901	C-12
D902	F-11	LED902	C-2
D981	F-9	LED906	C-3
D991	G-13	LED912	C-13
		LED931	C-11
IC901	G-8	LED932	C-4
IC971	D-13	LED951	A-12
IC981	G-10	LED952	A-2

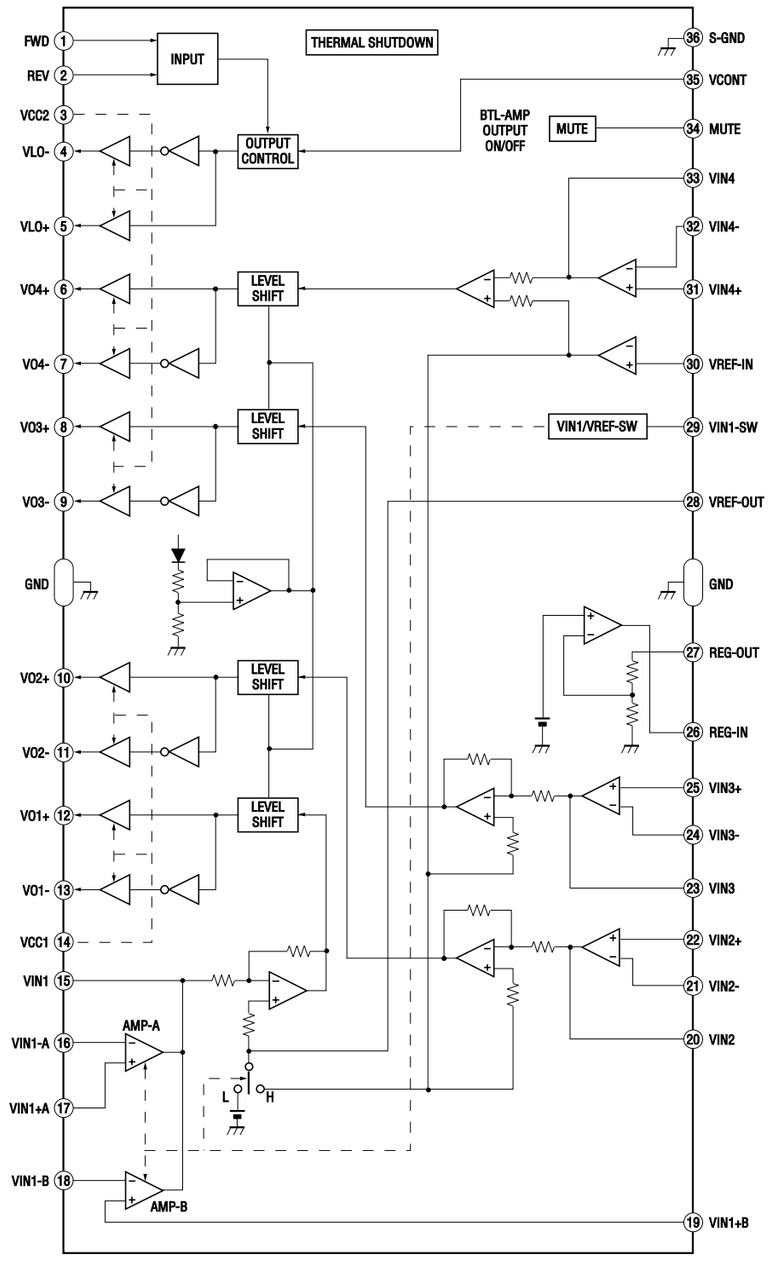
3-12. SCHEMATIC DIAGRAM — KEY SECTION — • Refer to page 18 for Common Note on Schematic Diagram.



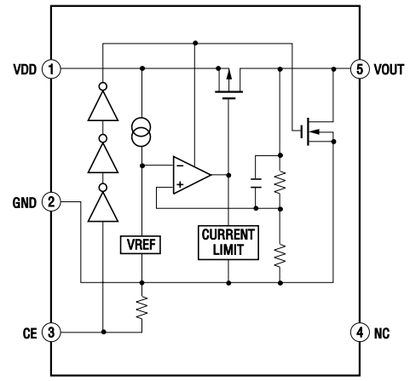
Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

3-13. IC BLOCK DIAGRAMS

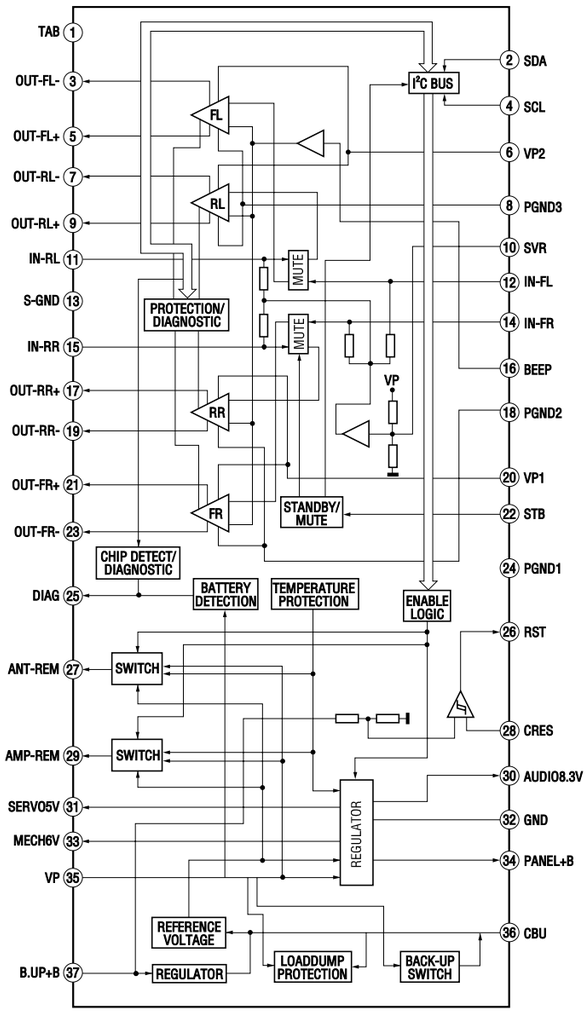
IC1 LA6560-TE-L-E



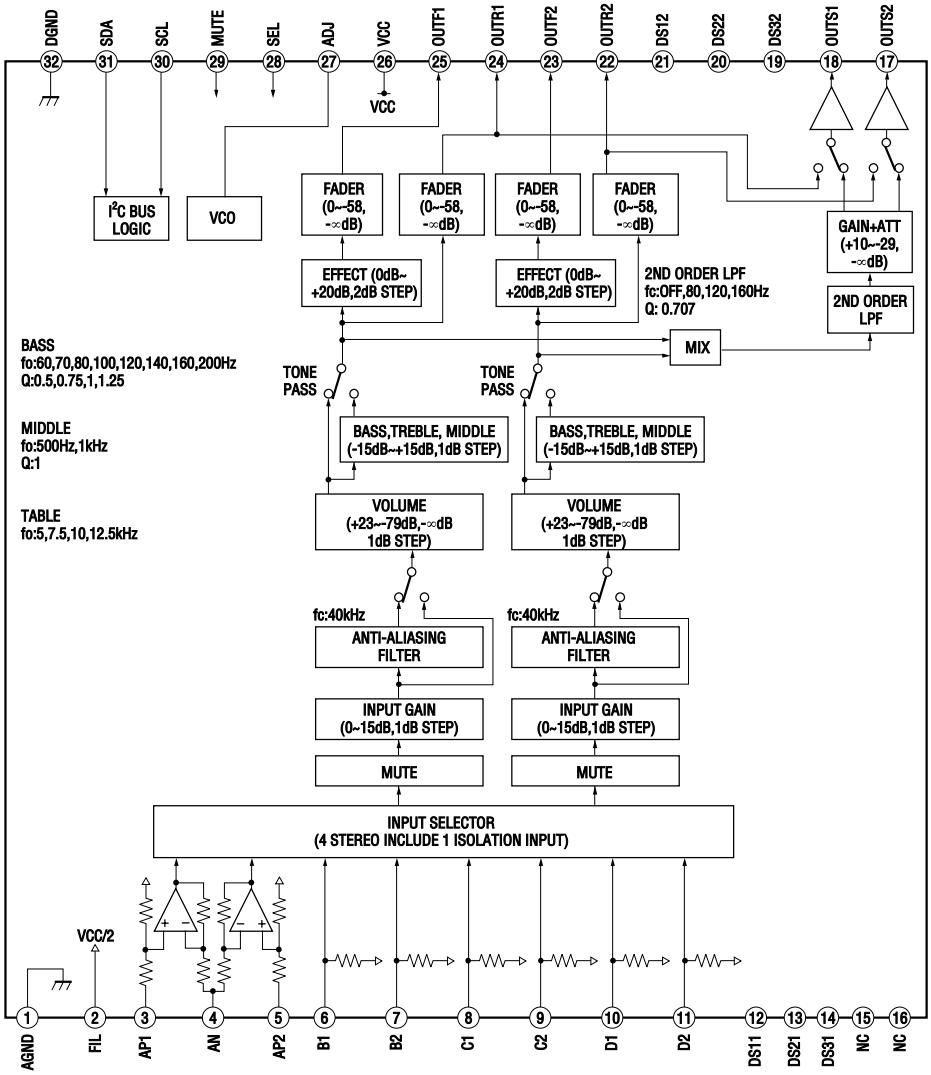
IC7 R1114N151D-TR-FA



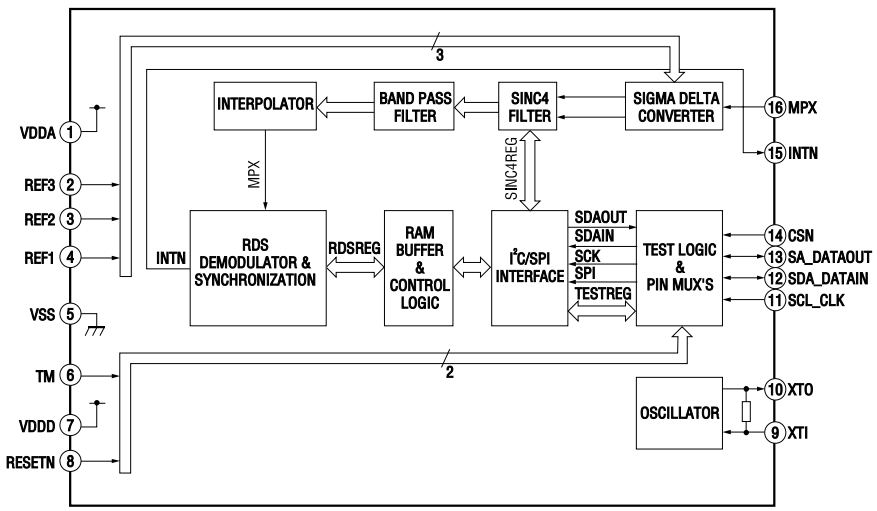
IC300 TDA8588BJ/N2/R1



IC400 BD3808FS-FE2



IC50 TDA7333-013TR



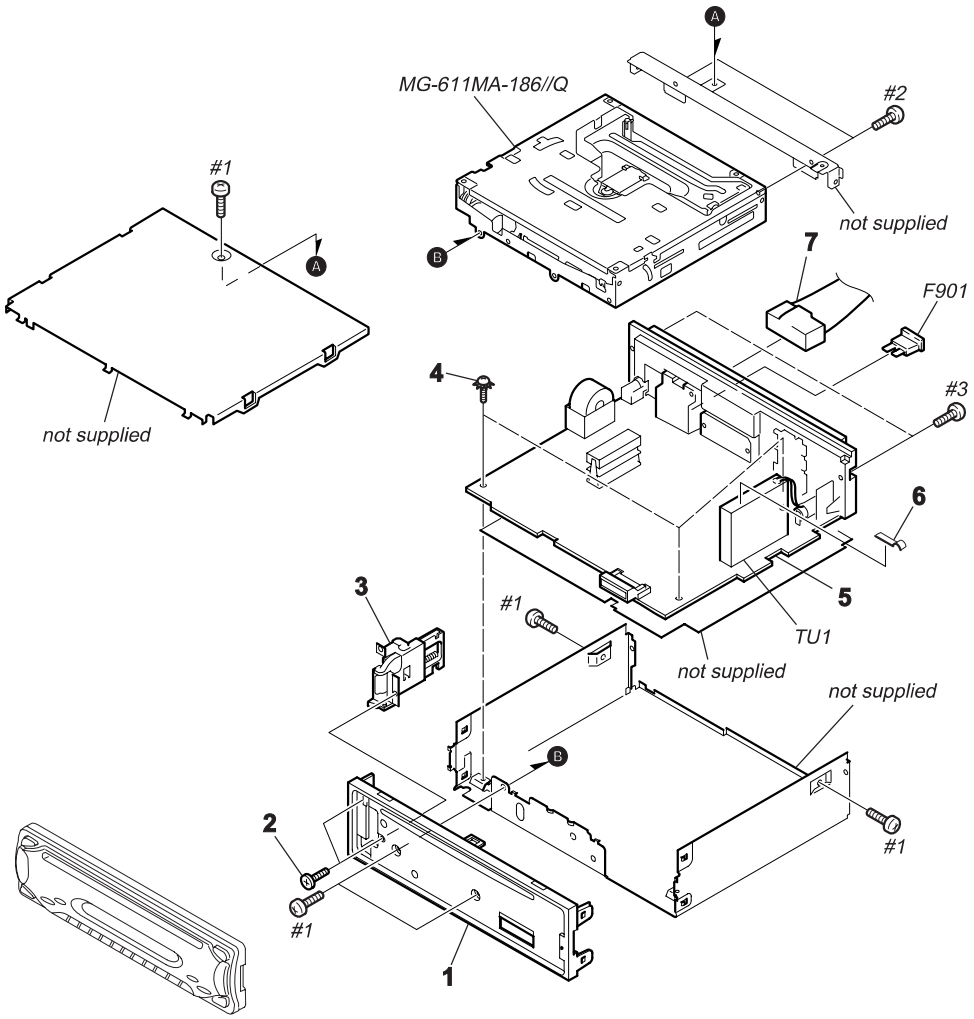
SECTION 4
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories are given in the last of this parts list.

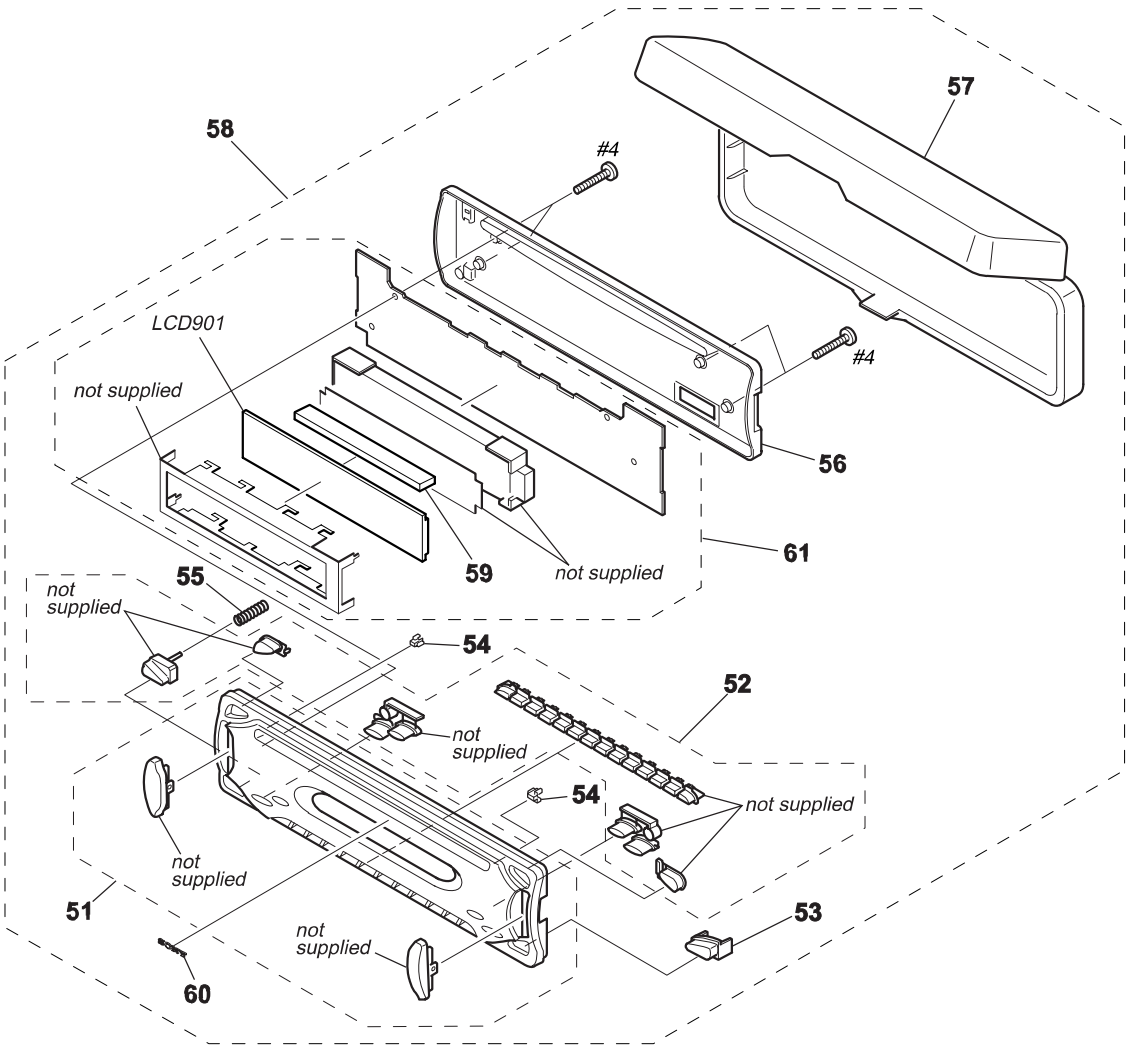
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

4-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	X-3384-176-2	PANEL SUB ASSY, SUB	
2	3-042-244-11	SCREW (T)	
3	X-3383-739-1	LOCK ASSY (S)	
4	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
5	A-1055-490-A	MAIN BOARD, COMPLETE	
6	3-246-481-01	PLATE (TU), GROUND	
7	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
TU1	A-3220-959-A	TUNER UNIT (TUX-032//Q)	
#1	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#2	7-685-790-01	SCREW +PTT 2.6X4 (S)	
#3	7-685-793-09	SCREW +PTT 2.6X8 (S)	

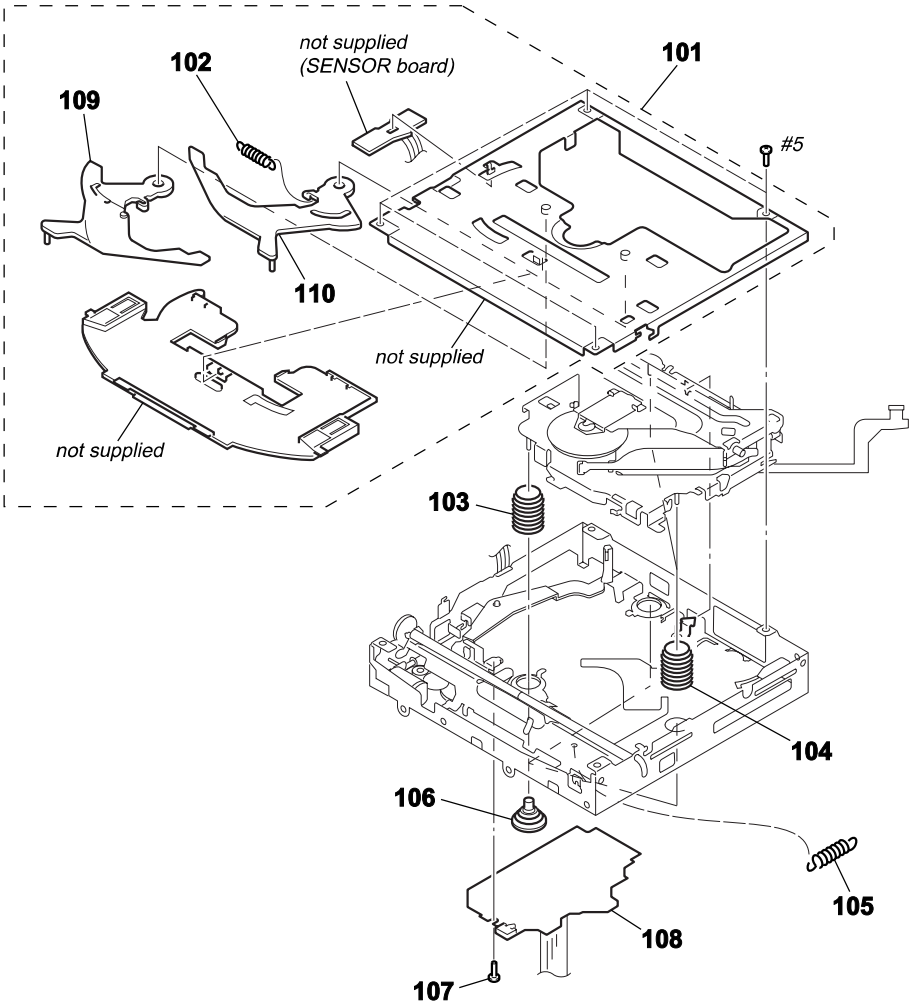
4-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-2021-550-1	PANEL SUB ASSY, FRONT	
52	X-3383-104-4	BUTTON ASSY (S)	
53	3-246-463-01	FILTER (IR)	
54	3-246-466-02	PLATE (CD), LIGHT GUIDE	
55	3-246-479-01	SPRING (RELEASE)	
56	3-246-454-04	PANEL (CD), FRONT BACK	
57	X-3383-264-2	CASE ASSY (for FRONT PANEL)	

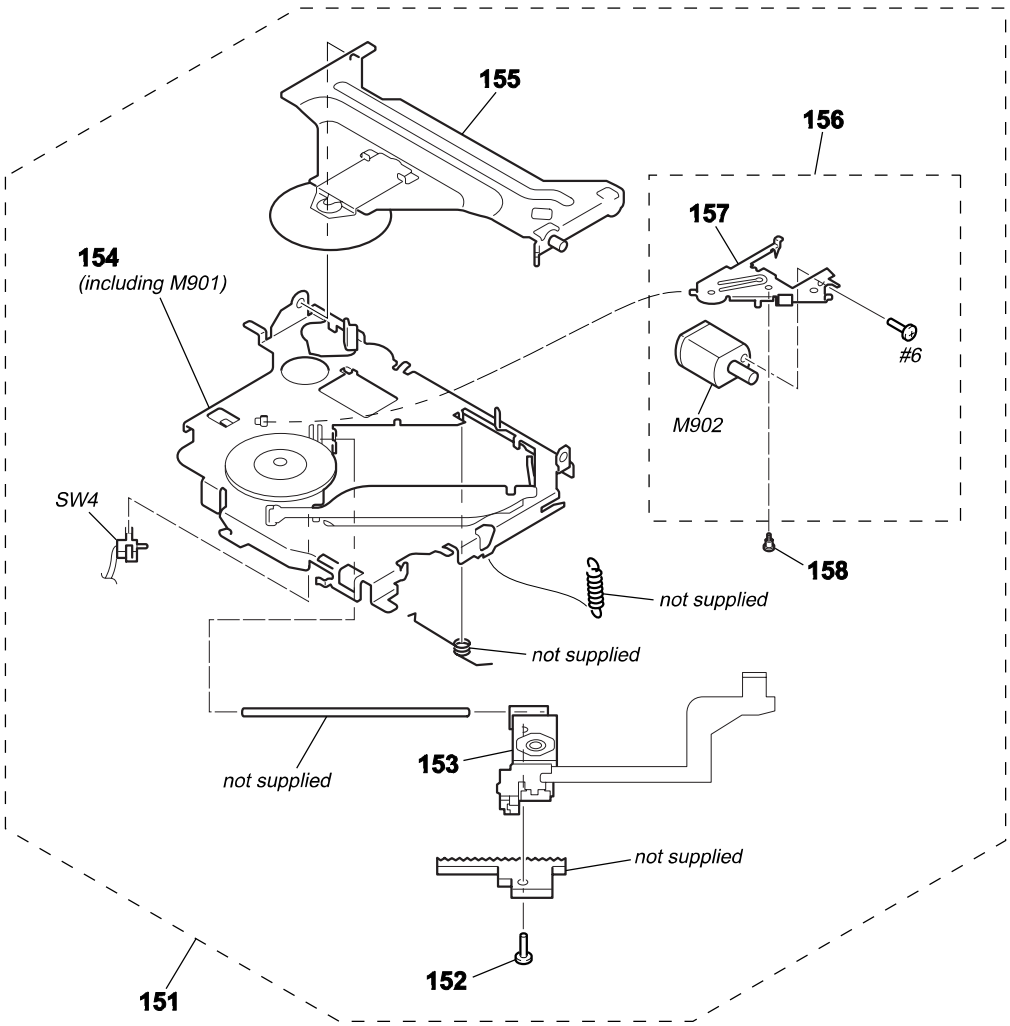
Ref. No.	Part No.	Description	Remark
58	A-1055-488-A	PANEL COMPLETE ASSY, FRONT	
59	1-694-977-12	CONDUCTIVE BOARD, CONNECTION	
60	3-251-320-11	EMBLEM (NO.2.5), SONY	
61	A-1055-491-A	KEY BOARD, COMPLETE	
LCD901	1-805-636-11	DISPLAY PANEL, LIQUID CRYSTAL	
#4	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	

4-3. CD MECHANISM SECTION (1)
(MG-611MA-186//Q)



Ref. No.	Part No.	Description	Remark
101	A-3372-444-A	CHASSIS (T) SUB ASSY	
102	3-253-729-11	SPRING (LTR), TENSION COIL	
103	3-257-892-12	SPRING (DAMPER), COIL	
104	3-257-892-01	SPRING (DAMPER), COIL	
105	3-253-695-11	SPRING (KF), TENSION COIL	
106	3-259-033-01	DAMPER (S)	
107	3-352-758-31	SCREW (M1.7), TOOTHED LOCK	
108	A-3283-357-A	SERVO BOARD, COMPLETE	
109	X-3384-088-1	LEVER (L) ASSY	
110	X-3384-089-1	LEVER (R) ASSY	
#5	7-627-552-87	SCREW, PRECISION +P 1.7X2.2	

4-4. CD MECHANISM SECTION (2)
(MG-611MA-186//Q)

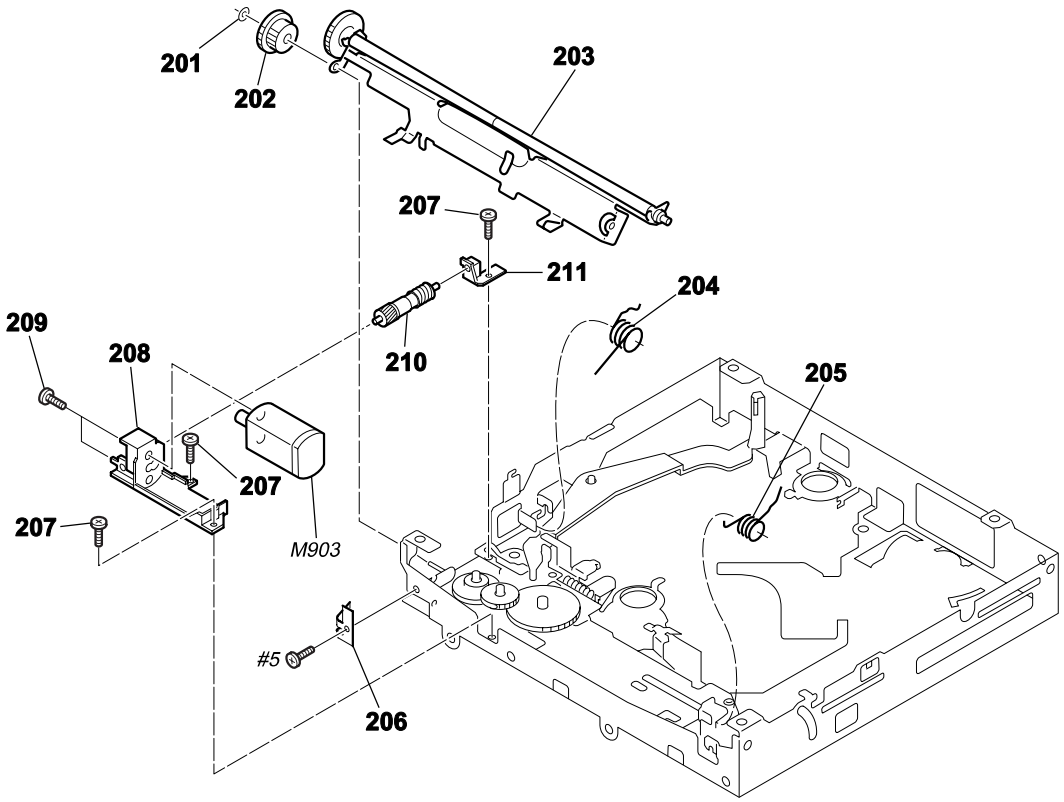


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
151	A-3372-445-A	CHASSIS (OP) COMPLETE ASSY	
152	3-316-938-91	SCREW (B1.4X5), TAPPING	
⚠153	8-820-207-02	OPTICAL PICK-UP (KSS1000E/K1RP)	
154	A-3372-448-A	CHASSIS (OP) SUB ASSY (including M901)	
155	A-3372-449-A	ARM SUB ASSY, CHUCKING	
156	A-3372-446-A	LEVER (SL) SUB ASSY	

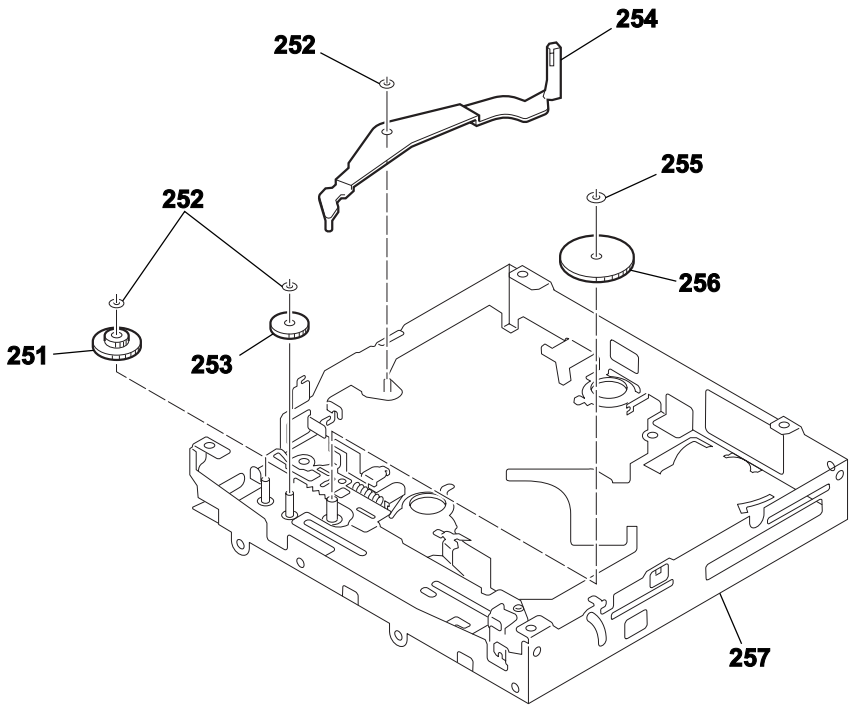
Ref. No.	Part No.	Description	Remark
157	X-3384-090-2	LEVER (SL) ASSY	
158	3-264-165-12	SCREW	
M902	A-3372-447-A	MOTOR ASSY, SL (SLED)	
SW4	1-571-099-11	SWITCH (1 KEY) (LIMIT)	
#6	7-627-850-77	SCREW, PRECISION +P 1.4X1.8	

4-5. CD MECHANISM SECTION (3)
(MG-611MA-186//Q)



Ref. No.	Part No.	Description	Remark
201	3-348-993-01	WASHER	
202	3-259-024-01	WHEEL (RA), WORM	
203	A-3372-441-A	ARM ASSY, ROLLER	
204	3-259-455-11	SPRING (RAL)	
205	3-253-713-11	SPRING (RAR)	
206	3-259-469-12	SPRING (LE), LEAF	
207	2-134-636-21	SCREW (M1.7X2.5)	
208	3-259-467-11	BRACKET (LEM)	
209	3-345-648-91	SCREW (M1.4), TOOTHED LOCK	
210	A-3372-450-A	WORM (LEB) ASSY	
211	3-259-468-11	BEARING (LEB)	
M903	A-3372-443-A	MOTOR ASSY, LE (LOADING)	
#5	7-627-552-87	SCREW, PRECISION +P 1.7X2.2	

4-6. CD MECHANISM SECTION (4)
(MG-611MA-186//Q)



Ref. No.	Part No.	Description	Remark
251	3-259-429-11	WHEEL (LE), WORM	
252	3-344-223-01	WASHER	
253	3-259-470-11	GEAR (LE1)	
254	3-253-755-12	LEVER (D)	
255	3-899-829-01	WASHER (SLIT)	
256	3-259-032-01	GEAR (LE2)	
257	A-3337-998-A	CHASSIS (M) BLOCK ASSY	

KEY

SECTION 5
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-1055-491-A	KEY BOARD, COMPLETE **********			
	1-694-977-12	CONDUCTIVE BOARD, CONNECTION			
		< CAPACITOR >			
C971	1-135-834-11	CERAMIC CHIP	2.2uF		6.3V
C981	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C982	1-135-834-11	CERAMIC CHIP	2.2uF		6.3V
C991	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C992	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C993	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C994	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C995	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C996	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
		< CONNECTOR >			
CN901	1-794-312-11	PIN, CONNECTOR 12P			
		< DIODE >			
D901	8-719-085-72	DIODE UMZ6.8ENTR			
D902	8-719-083-66	DIODE UDZSTE-1718B			
D981	8-719-404-50	DIODE MA111-TX			
D991	8-719-069-54	DIODE UDZSTE-175.1B			
		< IC >			
IC901	6-705-180-01	IC LC75827W			
IC971	6-600-163-01	IC RS-770 (IR)			
IC981	6-705-374-01	IC MM3033DULE			
		< LIQUID CRYSTAL DISPLAY >			
LCD901	1-805-636-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< DIODE >			
LED901	6-500-450-01	LED CL-195SR-CD-T (OFF)			
LED902	6-500-450-01	LED CL-195SR-CD-T (SOURCE)			
LED906	6-500-450-01	LED CL-195SR-CD-T (MODE)			
LED912	6-500-450-01	LED CL-195SR-CD-T (EQ3)			
LED931	6-500-459-01	LED NSCW505T-ARS (LCD BACK LIGHT R)			
LED932	6-500-459-01	LED NSCW505T-ARS (LCD BACK LIGHT L)			
LED951	6-500-450-01	LED CL-195SR-CD-T (DISC IND R)			
LED952	6-500-450-01	LED CL-195SR-CD-T (DISC IND L)			

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
LSW900	1-771-883-31	SWITCH, TACTILE (WITH LED) (⏏)			
LSW903	1-771-883-31	SWITCH, TACTILE (WITH LED) (SEL)			
LSW904	1-771-883-31	SWITCH, TACTILE (WITH LED) (+ (VOLUME))			
LSW905	1-771-883-31	SWITCH, TACTILE (WITH LED) (– (VOLUME))			
LSW907	1-771-883-31	SWITCH, TACTILE (WITH LED) (AF)			
LSW908	1-771-883-31	SWITCH, TACTILE (WITH LED) (ATT)			
LSW909	1-771-883-31	SWITCH, TACTILE (WITH LED) (SENS/BTM)			
LSW910	1-771-883-31	SWITCH, TACTILE (WITH LED) (SEEK +/▶▶I/▶▶)			
LSW911	1-771-883-31	SWITCH, TACTILE (WITH LED) (◀◀/I◀◀/SEEK –)			
LSW913	1-771-883-31	SWITCH, TACTILE (WITH LED) (TA)			
LSW914	1-771-883-31	SWITCH, TACTILE (WITH LED) (DSPL)			
LSW915	1-771-883-31	SWITCH, TACTILE (WITH LED) (PTY)			
LSW916	1-771-883-31	SWITCH, TACTILE (WITH LED) (6)			
LSW917	1-771-883-31	SWITCH, TACTILE (WITH LED) (5)			
LSW918	1-771-883-31	SWITCH, TACTILE (WITH LED) (4/SHUF)			
LSW919	1-771-883-31	SWITCH, TACTILE (WITH LED) (3/REP)			
LSW920	1-771-883-31	SWITCH, TACTILE (WITH LED) (2/ALBUM +)			
LSW921	1-771-883-31	SWITCH, TACTILE (WITH LED) (1/ALBUM –)			
		< RESISTOR >			
R901	1-216-819-11	METAL CHIP	680	5%	1/10W
R902	1-216-819-11	METAL CHIP	680	5%	1/10W
R903	1-216-819-11	METAL CHIP	680	5%	1/10W
R904	1-216-821-11	METAL CHIP	1K	5%	1/10W
R905	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R906	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R907	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R908	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R909	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R911	1-216-819-11	METAL CHIP	680	5%	1/10W
R912	1-216-819-11	METAL CHIP	680	5%	1/10W
R913	1-216-819-11	METAL CHIP	680	5%	1/10W
R914	1-216-821-11	METAL CHIP	1K	5%	1/10W
R915	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R916	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R917	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R918	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R919	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R920	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R921	1-216-833-11	METAL CHIP	10K	5%	1/10W
R924	1-216-809-11	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R925	1-216-807-11	METAL CHIP	68	5%	1/10W
R926	1-216-805-11	METAL CHIP	47	5%	1/10W
R931	1-216-809-11	METAL CHIP	100	5%	1/10W
R932	1-216-809-11	METAL CHIP	100	5%	1/10W
R933	1-216-809-11	METAL CHIP	100	5%	1/10W
R937	1-216-817-11	METAL CHIP	470	5%	1/10W
R938	1-216-809-11	METAL CHIP	100	5%	1/10W
R939	1-216-807-11	METAL CHIP	68	5%	1/10W
R944	1-216-811-11	METAL CHIP	150	5%	1/10W
R945	1-216-803-11	METAL CHIP	33	5%	1/10W
R948	1-216-811-11	METAL CHIP	150	5%	1/10W
R949	1-216-803-11	METAL CHIP	33	5%	1/10W
R953	1-216-811-11	METAL CHIP	150	5%	1/10W
R954	1-216-803-11	METAL CHIP	33	5%	1/10W
R957	1-216-817-11	METAL CHIP	470	5%	1/10W
R958	1-216-809-11	METAL CHIP	100	5%	1/10W
R959	1-216-807-11	METAL CHIP	68	5%	1/10W
R964	1-216-809-11	METAL CHIP	100	5%	1/10W
R965	1-216-809-11	METAL CHIP	100	5%	1/10W
R966	1-216-809-11	METAL CHIP	100	5%	1/10W
R970	1-216-864-11	SHORT CHIP	0		
R971	1-216-821-11	METAL CHIP	1K	5%	1/10W
R972	1-216-809-11	METAL CHIP	100	5%	1/10W
R981	1-216-817-11	METAL CHIP	470	5%	1/10W
R982	1-216-817-11	METAL CHIP	470	5%	1/10W
R983	1-216-817-11	METAL CHIP	470	5%	1/10W
R984	1-216-817-11	METAL CHIP	470	5%	1/10W
R985	1-216-817-11	METAL CHIP	470	5%	1/10W
R986	1-216-817-11	METAL CHIP	470	5%	1/10W
R987	1-216-811-11	METAL CHIP	150	5%	1/10W
R988	1-216-811-11	METAL CHIP	150	5%	1/10W
R989	1-216-811-11	METAL CHIP	150	5%	1/10W
R991	1-216-864-11	SHORT CHIP	0		
R992	1-216-840-11	METAL CHIP	39K	5%	1/10W
R993	1-216-857-11	METAL CHIP	1M	5%	1/10W
R994	1-216-821-11	METAL CHIP	1K	5%	1/10W
R995	1-216-821-11	METAL CHIP	1K	5%	1/10W
R996	1-216-821-11	METAL CHIP	1K	5%	1/10W
R997	1-216-803-11	METAL CHIP	33	5%	1/10W
R998	1-216-864-11	SHORT CHIP	0		
		< SWITCH >			
S901	1-771-884-31	SWITCH, TACTILE (OFF)			
S902	1-771-884-31	SWITCH, TACTILE (SOURCE)			
S906	1-771-884-31	SWITCH, TACTILE (MODE)			
S912	1-771-884-31	SWITCH, TACTILE (EQ3)			
**********					
	A-1055-490-A	MAIN BOARD, COMPLETE			
		**********			
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
	7-685-795-09	SCREW +PTT 2.6X12 (S)			
		< CAPACITOR >			
C1	1-126-963-11	ELECT	4.7uF	20%	50V
C2	1-126-947-11	ELECT	47uF	20%	35V
C3	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5	1-126-947-11	ELECT	47uF	20%	35V

Ref. No.	Part No.	Description			Remark
C6	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C7	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C8	1-115-412-11	CERAMIC CHIP	680PF	5%	25V
C50	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C51	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C52	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C53	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C54	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C55	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C56	1-164-237-11	CERAMIC CHIP	16PF	5%	50V
C57	1-164-237-11	CERAMIC CHIP	16PF	5%	50V
C58	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C59	1-126-947-11	ELECT	47uF	20%	35V
C60	1-115-412-11	CERAMIC CHIP	680PF	5%	25V
C301	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C303	1-128-551-11	ELECT	22uF	20%	63V
C304	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C305	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C306	1-126-964-11	ELECT	10uF	20%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V
C309	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C310	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C312	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C314	1-126-964-11	ELECT	10uF	20%	50V
C316	1-126-964-11	ELECT	10uF	20%	50V
C317	1-126-961-11	ELECT	2.2uF	20%	50V
C318	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C319	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C320	1-126-947-11	ELECT	47uF	20%	35V
C321	1-126-964-11	ELECT	10uF	20%	50V
C351	1-128-551-11	ELECT	22uF	20%	63V
C352	1-128-551-11	ELECT	22uF	20%	63V
C353	1-128-551-11	ELECT	22uF	20%	63V
C354	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C355	1-128-551-11	ELECT	22uF	20%	63V
C400	1-126-964-11	ELECT	10uF	20%	50V
C403	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C404	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C405	1-126-960-11	ELECT	1uF	20%	50V
C406	1-126-960-11	ELECT	1uF	20%	50V
C411	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C412	1-126-947-11	ELECT	47uF	20%	35V
C421	1-126-964-11	ELECT	10uF	20%	50V
C431	1-126-964-11	ELECT	10uF	20%	50V
C432	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C441	1-126-964-11	ELECT	10uF	20%	50V
C451	1-126-964-11	ELECT	10uF	20%	50V
C452	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C471	1-126-964-11	ELECT	10uF	20%	50V
C481	1-126-964-11	ELECT	10uF	20%	50V
C491	1-126-947-11	ELECT	47uF	20%	35V
C492	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C500	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C501	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C502	1-104-665-11	ELECT	100uF	20%	25V
C504	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C505	1-125-710-11	DOUBLE LAYERS	0.1F		5.5V
C506	1-126-924-11	ELECT	330uF	20%	10V

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Ref. No.	Part No.	Description			Remark
C510	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C511	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C512	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C515	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C516	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C517	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C518	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C519	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C521	1-126-964-11	ELECT	10uF	20%	50V
C522	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C701	1-131-868-81	ELECT	3300uF	20%	16V
C702	1-126-961-11	ELECT	2.2uF	20%	50V
C703	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C800	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C801	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C802	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C803	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C995	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C996	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C997	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C999	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CN102	1-794-311-21	PLUG, CONNECTOR 12P			
CN350	1-817-536-11	CONNECTOR, BOARD TO BOARD 28P			
CN700	1-774-701-21	PIN, CONNECTOR 16P			
		< DIODE >			
D2	8-719-036-94	DIODE	RD5.6SB-T1		
D101	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D102	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D103	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D104	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D105	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D106	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D107	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D108	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D301	8-719-200-82	DIODE	11ES2		
D302	8-719-200-82	DIODE	11ES2		
D303	8-719-200-82	DIODE	11ES2		
D304	8-719-200-82	DIODE	11ES2		
D305	8-719-200-82	DIODE	11ES2		
D306	8-719-200-82	DIODE	11ES2		
D307	8-719-200-82	DIODE	11ES2		
D308	8-719-200-82	DIODE	11ES2		
D309	8-719-200-82	DIODE	11ES2		
D310	8-719-200-82	DIODE	11ES2		
D311	8-719-200-82	DIODE	11ES2		
D312	8-719-200-82	DIODE	11ES2		
D351	6-501-013-01	DIODE	BAT54ALT1G		
D491	8-719-404-50	DIODE	MA111-TX		
D492	8-719-036-94	DIODE	RD5.6SB-T1		
D493	8-719-040-04	DIODE	MA721WK-(TX)		
D501	8-719-820-05	DIODE	1SS181		
D601	8-719-040-04	DIODE	MA721WK-(TX)		
D602	8-719-056-93	DIODE	UDZ-TE-17-18B		

Ref. No.	Part No.	Description	Remark
D603	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D701	8-719-056-93	DIODE UDZ-TE-17-18B	
D702	8-719-056-93	DIODE UDZ-TE-17-18B	
D703	8-719-056-93	DIODE UDZ-TE-17-18B	
D704	8-719-049-38	DIODE 1N5404TU	
		< IC >	
IC50	6-803-747-01	IC TDA7333-013TR	
IC300	6-705-360-02	IC TDA8588BJ/N2/R1	
IC400	6-705-372-01	IC BD3808FS-FE2	
IC500	6-804-459-01	IC MN101E01JKD	
IC502	8-759-659-13	IC PST3428UL	
		< JACK >	
J1	1-815-185-13	JACK (ANTENNA)	
J400	1-774-698-11	JACK, PIN 2P (AUDIO OUT REAR)	
J561	1-566-822-41	JACK (REMOTE IN)	
		< JUMPER RESISTOR >	
JC1	1-216-296-11	SHORT CHIP 0	
JC50	1-216-864-11	SHORT CHIP 0	
JC51	1-216-864-11	SHORT CHIP 0	
JC300	1-216-296-11	SHORT CHIP 0	
JC301	1-216-296-11	SHORT CHIP 0	
JC302	1-216-296-11	SHORT CHIP 0	
JC303	1-216-296-11	SHORT CHIP 0	
JC304	1-216-864-11	SHORT CHIP 0	
JC350	1-216-296-11	SHORT CHIP 0	
JC400	1-216-864-11	SHORT CHIP 0	
JC401	1-216-296-11	SHORT CHIP 0	
JC402	1-216-864-11	SHORT CHIP 0	
JC403	1-216-864-11	SHORT CHIP 0	
JC423	1-216-864-11	SHORT CHIP 0	
JC501	1-216-864-11	SHORT CHIP 0	
JC502	1-216-296-11	SHORT CHIP 0	
JC503	1-216-864-11	SHORT CHIP 0	
JC504	1-216-296-11	SHORT CHIP 0	
JC505	1-216-296-11	SHORT CHIP 0	
JC506	1-216-296-11	SHORT CHIP 0	
JC508	1-216-296-11	SHORT CHIP 0	
JC509	1-216-864-11	SHORT CHIP 0	
JC511	1-216-864-11	SHORT CHIP 0	
JC601	1-216-864-11	SHORT CHIP 0	
JC701	1-216-864-11	SHORT CHIP 0	
JC702	1-216-296-11	SHORT CHIP 0	
JC703	1-216-296-11	SHORT CHIP 0	
		< COIL >	
L1	1-469-844-11	INDUCTOR 2.2uH	
L2	1-469-844-11	INDUCTOR 2.2uH	
L50	1-414-595-11	INDUCTOR, FERRITE BEAD	
L51	1-414-595-11	INDUCTOR, FERRITE BEAD	
L351	1-500-245-11	INDUCTOR, FERRITE BEAD	
L352	1-500-245-11	INDUCTOR, FERRITE BEAD	
L353	1-469-876-11	INDUCTOR, FERRITE BEAD	
L354	1-500-245-11	INDUCTOR, FERRITE BEAD	
L355	1-469-876-11	INDUCTOR, FERRITE BEAD	
L356	1-500-245-11	INDUCTOR, FERRITE BEAD	

Ref. No.	Part No.	Description			Remark
L357	1-469-876-11	INDUCTOR, FERRITE BEAD			
L358	1-469-876-11	INDUCTOR, FERRITE BEAD			
L359	1-216-295-11	SHORT CHIP	0		
L700	1-456-617-11	COIL, CHOKE			
		< TRANSISTOR >			
Q1	8-729-421-19	TRANSISTOR	UN2213		
Q3	8-729-920-85	TRANSISTOR	2SD1664-QR		
Q50	8-729-421-22	TRANSISTOR	UN2211		
Q51	8-729-026-49	TRANSISTOR	2SA1037AK-T146-R		
Q420	6-550-752-01	TRANSISTOR	DTC614TKT146		
Q430	6-550-752-01	TRANSISTOR	DTC614TKT146		
Q440	6-550-752-01	TRANSISTOR	DTC614TKT146		
Q450	6-550-752-01	TRANSISTOR	DTC614TKT146		
Q470	6-550-752-01	TRANSISTOR	DTC614TKT146		
Q480	6-550-752-01	TRANSISTOR	DTC614TKT146		
Q491	8-729-424-08	TRANSISTOR	UN2111		
Q492	8-729-421-19	TRANSISTOR	UN2213		
Q501	8-729-424-08	TRANSISTOR	UN2111		
Q605	8-729-421-22	TRANSISTOR	UN2211		
Q606	8-729-421-19	TRANSISTOR	UN2213		
Q607	8-729-010-25	TRANSISTOR	MSD601-RT1		
Q701	8-729-010-25	TRANSISTOR	MSD601-RT1		
Q702	8-729-010-25	TRANSISTOR	MSD601-RT1		
		< RESISTOR >			
R1	1-216-809-11	METAL CHIP	100	5%	1/10W
R2	1-216-839-11	METAL CHIP	33K	5%	1/10W
R3	1-216-843-11	METAL CHIP	68K	5%	1/10W
R4	1-216-839-11	METAL CHIP	33K	5%	1/10W
R5	1-216-843-11	METAL CHIP	68K	5%	1/10W
R6	1-216-809-11	METAL CHIP	100	5%	1/10W
R7	1-216-809-11	METAL CHIP	100	5%	1/10W
R8	1-216-839-11	METAL CHIP	33K	5%	1/10W
R9	1-216-843-11	METAL CHIP	68K	5%	1/10W
R10	1-216-821-11	METAL CHIP	1K	5%	1/10W
R52	1-216-845-11	METAL CHIP	100K	5%	1/10W
R53	1-414-595-11	INDUCTOR, FERRITE BEAD			
R54	1-216-801-11	METAL CHIP	22	5%	1/10W
R55	1-414-595-11	INDUCTOR, FERRITE BEAD			
R56	1-216-845-11	METAL CHIP	100K	5%	1/10W
R57	1-216-833-11	METAL CHIP	10K	5%	1/10W
R58	1-216-821-11	METAL CHIP	1K	5%	1/10W
R59	1-216-864-11	SHORT CHIP	0		
R101	1-216-809-11	METAL CHIP	100	5%	1/10W
R102	1-216-809-11	METAL CHIP	100	5%	1/10W
R103	1-216-809-11	METAL CHIP	100	5%	1/10W
R104	1-216-809-11	METAL CHIP	100	5%	1/10W
R105	1-216-809-11	METAL CHIP	100	5%	1/10W
R106	1-216-809-11	METAL CHIP	100	5%	1/10W
R107	1-216-809-11	METAL CHIP	100	5%	1/10W
R108	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R109	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R112	1-216-864-11	SHORT CHIP	0		
R301	1-216-809-11	METAL CHIP	100	5%	1/10W
R302	1-216-841-11	METAL CHIP	47K	5%	1/10W
R351	1-216-845-11	METAL CHIP	100K	5%	1/10W
R370	1-216-809-11	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R371	1-216-809-11	METAL CHIP	100	5%	1/10W
R404	1-218-881-11	METAL CHIP	27K	0.5%	1/10W
R420	1-216-809-11	METAL CHIP	100	5%	1/10W
R421	1-216-809-11	METAL CHIP	100	5%	1/10W
R422	1-216-841-11	METAL CHIP	47K	5%	1/10W
R423	1-216-864-11	SHORT CHIP	0		
R430	1-216-809-11	METAL CHIP	100	5%	1/10W
R431	1-216-809-11	METAL CHIP	100	5%	1/10W
R432	1-216-841-11	METAL CHIP	47K	5%	1/10W
R433	1-216-864-11	SHORT CHIP	0		
R440	1-216-809-11	METAL CHIP	100	5%	1/10W
R441	1-216-809-11	METAL CHIP	100	5%	1/10W
R442	1-216-841-11	METAL CHIP	47K	5%	1/10W
R443	1-216-864-11	SHORT CHIP	0		
R450	1-216-809-11	METAL CHIP	100	5%	1/10W
R451	1-216-809-11	METAL CHIP	100	5%	1/10W
R452	1-216-841-11	METAL CHIP	47K	5%	1/10W
R453	1-216-864-11	SHORT CHIP	0		
R470	1-216-809-11	METAL CHIP	100	5%	1/10W
R471	1-216-809-11	METAL CHIP	100	5%	1/10W
R472	1-216-841-11	METAL CHIP	47K	5%	1/10W
R480	1-216-809-11	METAL CHIP	100	5%	1/10W
R481	1-216-809-11	METAL CHIP	100	5%	1/10W
R482	1-216-841-11	METAL CHIP	47K	5%	1/10W
R491	1-216-805-11	METAL CHIP	47	5%	1/10W
R492	1-216-864-11	SHORT CHIP	0		
R506	1-216-813-11	METAL CHIP	220	5%	1/10W
R507	1-216-864-11	SHORT CHIP	0		
R508	1-216-845-11	METAL CHIP	100K	5%	1/10W
R509	1-216-845-11	METAL CHIP	100K	5%	1/10W
R510	1-216-845-11	METAL CHIP	100K	5%	1/10W
R511	1-216-845-11	METAL CHIP	100K	5%	1/10W
R512	1-216-845-11	METAL CHIP	100K	5%	1/10W
R513	1-216-845-11	METAL CHIP	100K	5%	1/10W
R514	1-216-841-11	METAL CHIP	47K	5%	1/10W
R523	1-216-845-11	METAL CHIP	100K	5%	1/10W
R524	1-216-833-11	METAL CHIP	10K	5%	1/10W
R526	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R527	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R528	1-216-845-11	METAL CHIP	100K	5%	1/10W
R529	1-216-845-11	METAL CHIP	100K	5%	1/10W
R530	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R532	1-216-845-11	METAL CHIP	100K	5%	1/10W
R535	1-216-833-11	METAL CHIP	10K	5%	1/10W
R603	1-216-821-11	METAL CHIP	1K	5%	1/10W
R604	1-216-821-11	METAL CHIP	1K	5%	1/10W
R615	1-216-849-11	METAL CHIP	220K	5%	1/10W
R616	1-216-841-11	METAL CHIP	47K	5%	1/10W
R701	1-216-821-11	METAL CHIP	1K	5%	1/10W
R702	1-216-841-11	METAL CHIP	47K	5%	1/10W
R703	1-216-833-11	METAL CHIP	10K	5%	1/10W
R704	1-216-833-11	METAL CHIP	10K	5%	1/10W
R705	1-249-425-11	CARBON	4.7K	5%	1/4W
R706	1-216-841-11	METAL CHIP	47K	5%	1/10W
R707	1-216-841-11	METAL CHIP	47K	5%	1/10W
R708	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R709	1-216-821-11	METAL CHIP	1K	5%	1/10W

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MAIN **SENSOR** **SERVO**

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S103	1-692-431-21	SWITCH, TACTILE (RESET)			
		< TUNER >			
TU1	A-3220-959-A	TUNER UNIT (TUX-032//Q)			
		< VIBRATOR >			
X50	1-813-173-11	VIBRATOR, CRYSTAL (8.664MHz)			
X500	1-813-160-11	VIBRATOR, CERAMIC (27.648MHz)			
X501	1-813-202-11	VIBRATOR, CRYSTAL (32.768kHz)			
**********					
		SENSOR BOARD			
		**********			
		< SWITCH >			
SW2	1-529-566-61	SWITCH, PUSH (1 KEY) (SELF)			
SW3	1-529-566-61	SWITCH, PUSH (1 KEY) (DISC IN)			
**********					
	A-3283-357-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C2	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C3	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C5	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C6	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C7	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C8	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C10	1-104-609-11	ELECT CHIP	100uF	20%	4V
C11	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C13	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C14	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C16	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C18	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C19	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C21	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C22	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C23	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C24	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C25	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C26	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C27	1-126-208-21	ELECT CHIP	47uF	20%	4V
C28	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C29	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C30	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C32	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C33	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C34	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C35	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C36	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C37	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C38	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C39	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C40	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V

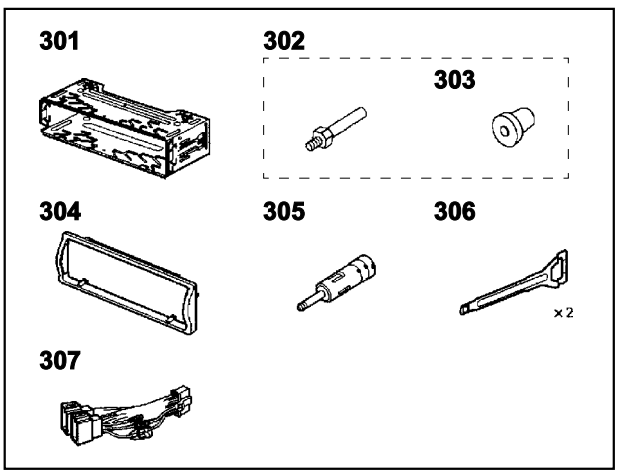
Ref. No.	Part No.	Description			Remark
C41	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C42	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C43	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C44	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C45	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C46	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C47	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C48	1-104-609-11	ELECT CHIP	100uF	20%	4V
C49	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C50	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C51	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C52	1-100-381-11	ELECT CHIP	10uF	20%	16V
C53	1-100-381-11	ELECT CHIP	10uF	20%	16V
C54	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C55	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C56	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C57	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C58	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C59	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C60	1-100-381-11	ELECT CHIP	10uF	20%	16V
C63	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C64	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C65	1-126-208-21	ELECT CHIP	47uF	20%	4V
C66	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C67	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C74	1-126-208-21	ELECT CHIP	47uF	20%	4V
C75	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C77	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C79	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C81	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C83	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C85	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C86	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C91	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C92	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C107	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C109	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C110	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C115	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
		< CONNECTOR >			
CN1	1-794-153-21	CONNECTOR, FPC (ZIF) 16P			
CN2	1-817-275-21	CONNECTOR, BOARD TO BOARD 28P			
		< JUMPER RESISTOR >			
FB1	1-216-864-11	SHORT CHIP	0		
FB2	1-216-864-11	SHORT CHIP	0		
FB5	1-216-864-11	SHORT CHIP	0		
		< IC >			
IC1	6-705-366-01	IC LA6560-TE-L-E			
IC3	8-753-216-86	IC CXD3059BR			
IC4	6-804-028-02	IC MB90487PFV-G-107-BNDE1			
IC7	6-705-364-01	IC R1114N151D-TR-FA			
IC8	6-705-365-01	IC TC94A34FG-002			
		< TRANSISTOR >			
Q1	8-729-904-87	TRANSISTOR 2SB1197K-R			

Ref. No.	Part No.	Description			Remark
Q2	8-729-928-90	TRANSISTOR	DTC114EE		
Q3	8-729-904-87	TRANSISTOR	2SB1197K-R		
Q5	8-729-904-87	TRANSISTOR	2SB1197K-R		
Q6	8-729-928-90	TRANSISTOR	DTC114EE		
		< RESISTOR >			
R1	1-218-941-81	RES-CHIP	100	5%	1/16W
R2	1-218-971-11	RES-CHIP	33K	5%	1/16W
R3	1-218-971-11	RES-CHIP	33K	5%	1/16W
R4	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5	1-218-965-11	RES-CHIP	10K	5%	1/16W
R6	1-218-965-11	RES-CHIP	10K	5%	1/16W
R7	1-208-635-11	METAL CHIP	10	0.5%	1/16W
R8	1-218-971-11	RES-CHIP	33K	5%	1/16W
R9	1-218-971-11	RES-CHIP	33K	5%	1/16W
R10	1-218-965-11	RES-CHIP	10K	5%	1/16W
R11	1-218-965-11	RES-CHIP	10K	5%	1/16W
R12	1-208-635-11	METAL CHIP	10	0.5%	1/16W
R13	1-218-965-11	RES-CHIP	10K	5%	1/16W
R14	1-218-990-11	SHORT CHIP	0		
R15	1-218-990-11	SHORT CHIP	0		
R16	1-218-990-11	SHORT CHIP	0		
R17	1-218-965-11	RES-CHIP	10K	5%	1/16W
R18	1-218-965-11	RES-CHIP	10K	5%	1/16W
R19	1-218-969-11	RES-CHIP	22K	5%	1/16W
R20	1-218-969-11	RES-CHIP	22K	5%	1/16W
R21	1-218-990-11	SHORT CHIP	0		
R22	1-218-967-11	RES-CHIP	15K	5%	1/16W
R23	1-218-967-11	RES-CHIP	15K	5%	1/16W
R24	1-218-953-11	RES-CHIP	1K	5%	1/16W
R25	1-218-953-11	RES-CHIP	1K	5%	1/16W
R26	1-218-981-11	RES-CHIP	220K	5%	1/16W
R27	1-218-965-11	RES-CHIP	10K	5%	1/16W
R28	1-218-990-11	SHORT CHIP	0		
R29	1-218-977-11	RES-CHIP	100K	5%	1/16W
R37	1-218-947-11	RES-CHIP	330	5%	1/16W
R38	1-218-967-11	RES-CHIP	15K	5%	1/16W
R39	1-218-941-81	RES-CHIP	100	5%	1/16W
R40	1-218-990-11	SHORT CHIP	0		
R41	1-218-985-11	RES-CHIP	470K	5%	1/16W
R42	1-218-965-11	RES-CHIP	10K	5%	1/16W
R43	1-218-977-11	RES-CHIP	100K	5%	1/16W
R44	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R45	1-218-971-11	RES-CHIP	33K	5%	1/16W
R46	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R47	1-218-977-11	RES-CHIP	100K	5%	1/16W
R48	1-218-941-81	RES-CHIP	100	5%	1/16W
R49	1-218-953-11	RES-CHIP	1K	5%	1/16W
R50	1-218-941-81	RES-CHIP	100	5%	1/16W
R52	1-218-941-81	RES-CHIP	100	5%	1/16W
R53	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R54	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R55	1-218-953-11	RES-CHIP	1K	5%	1/16W
R56	1-218-973-11	RES-CHIP	47K	5%	1/16W
R57	1-218-941-81	RES-CHIP	100	5%	1/16W
R59	1-218-941-81	RES-CHIP	100	5%	1/16W
R60	1-218-990-11	SHORT CHIP	0		
R61	1-218-985-11	RES-CHIP	470K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R62	1-218-965-11	RES-CHIP	10K	5%	1/16W
R64	1-218-941-81	RES-CHIP	100	5%	1/16W
R65	1-218-941-81	RES-CHIP	100	5%	1/16W
R67	1-218-941-81	RES-CHIP	100	5%	1/16W
R68	1-218-990-11	SHORT CHIP	0		
R69	1-218-973-11	RES-CHIP	47K	5%	1/16W
R70	1-218-945-11	RES-CHIP	220	5%	1/16W
R71	1-218-941-81	RES-CHIP	100	5%	1/16W
R72	1-218-990-11	SHORT CHIP	0		
R73	1-218-941-81	RES-CHIP	100	5%	1/16W
R74	1-218-941-81	RES-CHIP	100	5%	1/16W
R76	1-218-941-81	RES-CHIP	100	5%	1/16W
R77	1-218-990-11	SHORT CHIP	0		
R78	1-218-941-81	RES-CHIP	100	5%	1/16W
R79	1-218-941-81	RES-CHIP	100	5%	1/16W
R80	1-218-977-11	RES-CHIP	100K	5%	1/16W
R81	1-218-941-81	RES-CHIP	100	5%	1/16W
R85	1-218-973-11	RES-CHIP	47K	5%	1/16W
R86	1-218-973-11	RES-CHIP	47K	5%	1/16W
R87	1-218-973-11	RES-CHIP	47K	5%	1/16W
R91	1-220-200-81	RES-CHIP	30K	5%	1/16W
R92	1-218-971-11	RES-CHIP	33K	5%	1/16W
R97	1-218-941-81	RES-CHIP	100	5%	1/16W
R98	1-218-941-81	RES-CHIP	100	5%	1/16W
R99	1-218-965-11	RES-CHIP	10K	5%	1/16W
R101	1-218-969-11	RES-CHIP	22K	5%	1/16W
R106	1-218-969-11	RES-CHIP	22K	5%	1/16W
R107	1-218-965-11	RES-CHIP	10K	5%	1/16W
R108	1-218-941-81	RES-CHIP	100	5%	1/16W
R109	1-218-953-11	RES-CHIP	1K	5%	1/16W
R110	1-218-945-11	RES-CHIP	220	5%	1/16W
R111	1-218-990-11	SHORT CHIP	0		
R114	1-218-941-81	RES-CHIP	100	5%	1/16W
R115	1-218-941-81	RES-CHIP	100	5%	1/16W
R116	1-218-941-81	RES-CHIP	100	5%	1/16W
R117	1-218-990-11	SHORT CHIP	0		
R119	1-218-941-81	RES-CHIP	100	5%	1/16W
R122	1-218-965-11	RES-CHIP	10K	5%	1/16W
R123	1-218-990-11	SHORT CHIP	0		
R124	1-216-864-11	SHORT CHIP	0		
R126	1-218-965-11	RES-CHIP	10K	5%	1/16W
R127	1-218-965-11	RES-CHIP	10K	5%	1/16W
R128	1-218-965-11	RES-CHIP	10K	5%	1/16W
R129	1-218-965-11	RES-CHIP	10K	5%	1/16W
R133	1-216-864-11	SHORT CHIP	0		
R136	1-218-977-11	RES-CHIP	100K	5%	1/16W
R139	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R140	1-218-941-81	RES-CHIP	100	5%	1/16W
R141	1-218-941-81	RES-CHIP	100	5%	1/16W
R142	1-218-941-81	RES-CHIP	100	5%	1/16W
R143	1-218-941-81	RES-CHIP	100	5%	1/16W
R144	1-218-965-11	RES-CHIP	10K	5%	1/16W
R145	1-218-977-11	RES-CHIP	100K	5%	1/16W
R146	1-218-941-81	RES-CHIP	100	5%	1/16W
R147	1-218-941-81	RES-CHIP	100	5%	1/16W
R148	1-218-941-81	RES-CHIP	100	5%	1/16W
R149	1-218-941-81	RES-CHIP	100	5%	1/16W

SERVO

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
SW1	1-529-565-61	SWITCH, PUSH (1 KEY) (DOWN)	
		< VIBRATOR >	
X1	1-795-561-21	VIBRATOR, CERAMIC (16.9344MHz)	
X2	1-795-822-21	VIBRATOR, CERAMIC (18.43MHz)	
**********			
		MISCELLANEOUS	
		**********	
7	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)	
⚠153	8-820-207-02	OPTICAL PICK-UP (KSS1000E/K1RP)	
154	A-3372-448-A	CHASSIS (OP) SUB ASSY (including M901)	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
M902	A-3372-447-A	MOTOR ASSY, SL (SLED)	
M903	A-3372-443-A	MOTOR ASSY, LE (LOADING)	
SW4	1-571-099-11	SWITCH (1 KEY) (LIMIT)	
**********			
		ACCESSORIES	
		**********	
	2-023-361-11	MANUAL, INSTRUCTION (ENGLISH,GERMAN, FRENCH,ITALIAN,DUTCH)	
	2-023-362-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, GERMAN,FRENCH,ITALIAN,DUTCH)	
	X-3383-264-2	CASE ASSY (for FRONT PANEL)	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
301	X-3382-647-1	FRAME ASSY, FITTING	
302	X-3382-926-1	SCREW ASSY (BS), FITTING	
303	3-349-410-11	BUSHING	
304	3-246-468-01	COLLAR	
305	1-465-459-31	ADAPTOR, ANTENNA	
306	3-246-471-01	KEY (FRAME)	
307	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)	



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MEMO